LG

Service Manual

Model : C400 Series

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Chapter 1. Service information

1-1. Important service information

■ Strategy for replacing parts (FRU-Field Replaceable Units)

Before replacing parts

Make sure that latest BIOS and drivers are installed before replacing any parts (FRUs) listed in this

Use the following strategy to prevent unnecessary expense for replacing and servicing parts

1. If you are instructed to replacing a part but the replacement does not correct the problem, reinstall the original part before you continue.

2. Some computers have both a processor board and system board. If you are instructed to replace either the processor board or the system board, and replacing one of them does not correct the problem, reinstall that board, and then replace the other one.

3. If an adapter or device consists of more than one part, any of the parts (FRUs) may be the cause of the error. Before replacing the adapter or device, remove the parts (FRUs), one by one, to see if the symptoms change. Replace only the part that changed the symptoms.

Caution

The BIOS configuration on the computer you are servicing may have been customized. Running Automatic Configuration my alter the settings. Note the current configuration settings; then, when service has been completed, verify that those settings remain in effect.

■ Strategy for replacing a hard-disk drive

You have to get a User's approval before formatting or replacing a hard-disk drive. You must let the User know that the user is responsible for the loss data

Caution

The drive startup sequence in the computer you are servicing may have been changed. Be extremely careful during write operations such as copying, saving, or formatting. If you select an incorrect drive, data or programs can be overwritten.

1-2. Safety notices

> **Warning**
>
> Before the computer is powered-on after part (FRU) replacement, make sure all screws, springs, and other small parts are in place and are not left loose inside the computer. Verify this by shaking the computer and listening for rattling sounds. Metallic parts or metal flakes can cause electrical shorts.

> **Warning**
>
> some standby batteries contain a small amount of nickel and cadmium. Do not disassemble a standby battery, recharge it, throw it into fire or water, or short-circuit it. Dispose of the battery as required by local ordinances or regulations. Use only the battery in the appropriate parts listing. Use of an incorrect battery can result in ignition or explosion of the battery

> **Warning**
>
> The battery pack contains small amounts of nickel. Do not disassemble it, throw it into fire or water, or short-circuit it. Dispose of the battery pack as required by local ordinances or regulations. Use only the battery in the appropriate parts listing when replacing the battery pack. Use of an incorrect battery can result in ignition or explosion of the battery.

> **Warning**
>
> If the LCD breaks and the fluid from inside the LCD gets into your eyes or on your hands, immediately was the affected areas with water for at least 15 minutes. Seek medical care if any symptoms from the fluid are present after washing.

> **Warning**
>
> To avoid shock, do not remove the plastic cover that protects the lower part of the inverter card.

> **Warning**
>
> Though the main batteries have low voltage, a shorted or grounded battery can produce enough current to burn personnel or combustible materials.

> **Warning**
>
> Before removing any part (FRU), turn off the computer, unplug all power cords from electrical outlets, remove the battery pack, and then disconnect any interconnecting cables.

1-3. Safety information

■ General safety

Follow these rules to ensure general safety

· Observe good housekeeping in the area of the machines during and after maintenance.

· When lifting any heavy object

1. Ensure you can stand safely without slipping.

2. Distribute the weight of the object equally between your feet.

3. Use a slow lifting force. Never move suddenly or twist when you attempt to lift.

4. Lift by standing or by pushing up with your leg muscles

   (This action removes the strain from the muscles in your back.)

· Do not attempt to lift any object weights more then 16kg(35lb) or object that you think are too heavy for you.

· Do not perform any action that causes hazards to the customer, or that makes the equipment unsafe.

· Before you start the machine, ensure that other service representatives and the customer's personnel are not in a hazardous position.

· Place removed covers and other parts in a safe place, away from all personnel, while you are servicing the machine.

· Keep your tool box away from walk areas so that other people will not trip over it.

· Do not wear loose clothing that can be trapped in the moving parts of a machine. Make sure that your sleeves are fastened or rolled up above your elbows. If your hair is long, fasten it.

· Insert the ends of your necktie or scarf inside clothing or fasten it with a nonconductive clip, approximately 8 centimeters(3 inches) from the end.

· Do not wear jewelry, chains, metal-frame eyeglasses, or metal fasteners for you clothing.

· Wear safety glasses when you are hammering, drilling, soldering, cutting wire, attaching springs, using solvents, or working in any other conditions that might be hazardous to your eyes.

· After service, reinstall all safety shields, guards, labels, and ground wires. Replace any safety device that is worn or defective.

· Reinstall all covers correctly before returning the machine to the customer.

> ⚠ **Caution**
> Metal objects are good electrical conductors.

■ Electrical safety

Observe the following rules when working on electrical equipment.

Important

Use only approved tools and test equipment. Some hand tools have handles covered with a soft material that does not insulate you when working with live electrical currents.

Many customers have, near their equipment, rubber floor mats that contain small conductive fibers to decrease electrostatic discharges. Do not use this type of mat to protect yourself from electrical shock.

· Find the room emergency power-off switch, disconnecting switch, or electrical outlet. If an electrical outlet. If an electrical accident occurs, you can then operate the switch or unplug the power cord quickly.

· Do not work alone under hazardous conditions or near equipment that has hazardous voltages.

· Disconnect all power before

1. Performing a mechanical inspection

2. Working near power supplies

3. Removing or installing main units

· Before you start to work on the machine, unplug the power cord. If you cannot unplug it, ask the customer to power-off the wall box that supplies power to the machine and to lock the wall box in the off position.

· If you need to work on a machine that has exposed electrical circuits, observe the following precautions :
Ensure that another person, familiar with the power-off controls, is near you.

Caution

Another person must be there to switch off the power, if necessary.

· Use only one hand when working with powered-on electrical equipment. Keep the other hand in your pocket or behind your back

---

Caution

An electrical shock can occur only when there is a complete circuit. By observing the above rule, you may prevent a current from through your body.

· When using testers, set the controls correctly and use the approved probe leads and accessories for that tester

Ch1. Service information

· Stand on suitable rubber mats (obtained locally, if necessary) to insulate you from grounds such as metal floor strips and machine frames.

· Observe the special safety precautions when you work with very high voltages. These instructions are in the safety sections of maintenance information. Use extreme care when measuring high voltages.

· Regularly inspect and maintain your electrical hand tools for safe operational condition.

· Do not use worn or broken tools and testers.

· Never assume that power has been disconnected from a circuit. First check that it has been powered off.

· Always look carefully for possible hazards in your work area. Examples of these hazards are moist floors, non-grounded power extension cables, power surges, and missing safety grounds.

· Do not touch live electrical circuits with the reflective surface of a plastic dental mirror. The surface is conductive such touching can cause personal injury and machine damage.

· Do not service the following parts with the power on when they are removed from their normal operating places in a machine.

  1. Power supply units

  2. Pumps

  3. Blowers and fans

  4. Motorgenerators

     and similar units. (This practice ensure correct grounding of the units.)

· If an electrical accident occurs

  1. Use caution ; do not become a victim of yourself.

  2. Switch off power.

  3. Send another person to get medical aid.

■ Safety inspection guide

The purpose of this inspection guide is to assist you in identifying potentially unsafe conditions.

As each machine was designed and built, required safety items were installed to protect users and service personnel from injury. This guide addresses only those items. You should use good judgment to identify potential safety hazards due to attachment of non-LG features or options not covered by this inspection guide.

If any unsafe conditions are present, you must determine how serious the apparent hazard could be and whether you can continue without first correcting the problem.

· Consider these conditions and the safety hazards they present

  1. Electrical hazards, especially primary power (primary voltage on the frame can cause serious or fatal electrical shock)

  2. Mechanical hazards, such as loose or missing hardware

Refer to the following checklist and begin the checks with the power off, and the power cord disconnected.

· Checklist

  1. Check exterior covers for damage (loose, broken, or sharp edges)

  2. Power off the computer. Disconnect the power cord.

  3. Check the power cord for :

    a. A third-wire ground connector in good condition. Use a meter to measure third-wire ground continuity for 0.1 Ω or less between the external ground pin and frame ground.

    b. The power cord should be the type specified in the parts list.

    c. Insulation must not be frayed or worn.

  4. Remove the cover.

  5. Check for any obvious non-LG alterations. Use good judgment as to the safety of any non-LG alterations.

  6. Check inside the unit for any obvious unsafe conditions, such as metal filings, contamination, water or other liquids, or signs of fire or smoke damage.

  7. Check for worn, frayed, or pinched cables.

  8. Check that the power-supply cover fasteners (screw or rivets) have not been removed or tampered with.

■ Handling devices that are sensitive to electrostatic discharge

Any computer part containing transistors or integrated circuits (ICs) should be considered sensitive to electrostatic discharge (ESD). ESD damage can occur when there is a difference in charge between objects. Protect against ESD damage by equalizing the charge so that the machine, the part, the work mat, and the person handling the part are all at the same charge.

> **Note**
>
> Use product-specific ESD procedures when they exceed the requirements noted here.
>
> Make sure that the ESD protective devices you use have been certified (ISO9000) as fully effective.

· When handling ESD-sensitive parts :

1. Keep the parts in protective packages until they are inserted into the product.
2. Wear a grounded wrist strap against your skin to eliminate static on your body.
3. Prevent the part from touching your clothing. Most clothing retains a charge even when you are wearing a wrist strap.
4. Use the black side of a grounded work mat to provide a static-free work surface. The mat is especially useful when handling ESD-sensitive devices.
5. Select a grounding system, such as those listed below, to provide protection that meets the specific service requirement.

> **Note**
>
> The use of a grounding system is desirable but not required to protect against ESD damage.

   a. Attach the ESD ground clip too any frame ground, ground braid, or green-wire ground.
   b. Use an ESD ground or reference point when working on a double-insulated or battery-operated system. You can use coax or connector-outside shells on these systems.
   c. Use the round ground-prong of the AC plug on AC-operated computers.

■ Grounding requirements

Electrical grounding of the computers is required for operator safety and correct system function.

Proper grounding of the electrical outlet can be verified by a certified electrician.

1-4. Laser compliance statement

When a CD-ROM drive, DVD drive or the other laser product is installed, note the following :

> **Caution**
> Use of controls or adjustments or performance of procedures other than those specified here in might result in hazardous radiation exposure.

Opening the CD-ROM drive, DVD-ROM drive or the other optical storage device could result in exposure to hazardous laser radiation.

There are no serviceable parts inside those drives. Do not open

> **Danger**
> Emits visible and invisible laser radiation when open. Do not stare into the beam , do not view directly with optical instruments, and avoid direct exposure to the bean.

1-5. Backup (Standby) RTC battery safety information

When replacing or disposing of the backup (standby) RTC battery, note the following :

> **Caution**
> There is the risk of explosion if the backup (standby) RTC battery is replaced by an incorrect type.
> Dispose of used backup (standby) RTC battery according to your local ordinances or regulation.
>
> Для замены, используйте соответствующий тип батареек.
> Существует опасность воспламенения.
>
> Удаляйте отработанные батарейки согласно местным правилам или нормам.
> Неправильное удаление батареек может привести к их взрыву или пожару.
>
> باطری ذخیره (یدکی)را با نوع درست آن عوض کنید.
> خطر انفجار وجود دارد.
> باطری های ذخیره های (یدکی) استفاده شده را بر اساس دستورالعمل داخلی مصرف کنید.
> مصرف باطریهای نادرست منجر به انفجار یا آتش سوزی میشود.
>
> غير البطارية البديلة على الطراز المناسب.
> وهناك احتمال الانفجار.
> تخلص من البطاريات البديلة المستعملة حسب القوانين والانظمة المحلية.
> البطاريات المتخلص منها بصورة غير مناسبة قد تؤدي الى انفجار او احتراق.

1-6. Read this first

Before you go to the checkout guide, be sure to read this section.

Important Notes

· Only trained personnel certified by LG should service the computer.

· Read the entire FRU removal and replacement page before replacing any FRU.

· Use new nylon-coated screws when you replace FRUs.

· Be extremely careful during such write operations as copying, saving, formatting.

  Drives in the computer that you are servicing sequence might have been altered. If you selected an incorrect drive, data or programs might be overwritten.

· Replace FRUs only for the correct mode.

· When you replace a FRU, make sure the model of the machine and the FRU part number are correct by referring to the FRU parts list.

· A FRU should not be replaced because of a single, irreproducible failure. Single failures can occur for a variety of reasons that have nothing to do with a hard ware defect, such as cosmic radiation, electrostatic discharge, or software errors.

· Consider replacing a FRU only when a problem recurs. If you suspect that a FRU is defective, clear the error log and run the test again. If the error does not recur, do not replace the FRU.

· Be careful not to replace a non-defective FRU.

■ What to do first

You must fill out the record form first.

During the warranty period, the customer may be responsible for repair costs if the computer damage was caused by misuse, accident, modification, unsuitable physical or operating environment, or improper maintenance by the customer. The following list provides some common items that are not covered under warranty and some symptoms that might indicate that the system was subjected to stress beyond normal use. Before checking problems with computer, determine whether the damage is covered under the warranty by referring to the following :

The followings are not covered under warranty :

· CD panel cracked from the application of excessive force or from being dropped

· Scratched (cosmetic) parts

· Distortion, deformation, or discoloration of the cosmetic parts

· Cracked or broken plastic parts, broken latches, broken pins, or broken connectors caused by excessive force

· Damage caused by liquid spilled into system

· Damage caused by improper insertion of a PC Card or the installation of an incompatible card

· Damage caused foreign material in the diskette drive

· Diskette drive damage caused by pressure on the diskette drive cover or by the insertion of a diskette with multiple labels

· Damaged or bent diskette eject button

· Fusses blown by attachment of a non-supported device

· Forgotten computer password (making the computer unusable)

· Sticky keys caused by spilling a liquid onto the keyboard

The following symptoms might indicate damage caused by non-warranted activities :

· Missing parts might be a symptom of unauthorized service or modification.

· If the spindle of a hard-disk drive becomes noisy, it may have been subjected to excessive force, or dropped.

Chapter 2. Locations

■ Left View
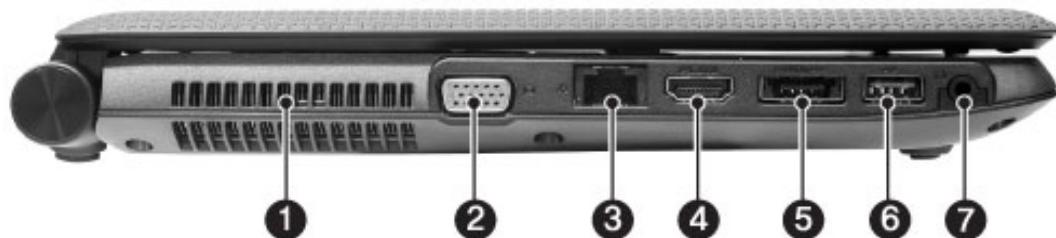
1. Fan louvers

2. VGA Port

3. LAN Port

4. HDMI Port

5. e-SATA / USB-combo Port

6. USB Port

7. Headphone Port

■ Right View

8. Optical Disk Drive

9. USB Port

10. Power Port

11. Kensington lock

■ Front View

1. Smart Cam

2. Power Button

3. Keyboard

4. Touchpad

5. Multi Card Slot

6. Stereo Speaker

Chapter 3. System information

■ Specification

Available Processors

• Intel ®Core™ i7 / i5 / i3 / Intel ®Pentium® processors (L3 cache memory: 3 MB – 8 MB) are supported.

 ※ L3 cache memory size differs depending on the CPU, which in turn differs depending on the model.

 ※ The user must not replace or expand the CPU capacity.

Main Memory

• C400 and A510, A505 series provide 2 memory slots.

• Each socket supports 1024 MB to 4096 MB, and the maximum capacity of the main board is 8 GB.

 ※ We recommend 2 GB (2048 MB) or 4 GB (4096 MB) memory for the main memory upgrade.

 ※ Memory of 4 GB or more is supported only in 64 bit O/S. 32 bit Windows Vista®, Windows® XP, and
   Windows® 7 do not support memory of 4 GB or more.

 ※ Memory types and capacity may differ depending on the model. When you want to use both memory sockets,
   you need to use the memory manufactured by the same company.

Secondary Storage Devices

• 6.35 cm (2.5 inch) Hard Disk Drive(SATA)

 ※ The capacity of the storage device or the hard disk type may differ depending on the model.

LCD

• 35.5 cm(14.0 inch) HD LED (1366 x 768) TFT Color LCD

 ※ Some models are equipped with Glare Type LCD. This model is enhanced the sharpness compare to the
   other types of LCD. So, it may appears glaring a lot but this is the normal status.

 ※ The size and the resolution rate of the LCD depend on the notebook PC model.

Bluetooth/Wireless LAN

• 802.11bgn w/ BT Combo (1x1)

• Intel Centrino Advanced – N 6200(AGN, 2x2) w/ Discrete BT Module

• BT 3.0(w/ Combo Card) or BT 2.1(w/ Intel WLAN)

 ※ A510, A505 and C400 Series supports Bluetooth 3.0. Depending on the model, a wireless LAN Bluetooth
   combo module or a separate Bluetooth module may be provided.

 ※ Models with Intel Wireless LAN support both Bluetooth 2.1 and 3.0.

 ※ The Bluetooth device is optional and may not be available depending on the model. The Bluetooth module
   you can use may differ depending on the model.

Smart Cam

• 0.3 Mega pixel Smart Cam (C400 Series)

• 1.3 Mega pixel Smart Cam (A410, A405 Series)

External I/O Interface

• External VGA Monitor Port: 1

• HDMI Port: 1

• Microphone (Stereo): 1

• Headset Output Port : 1

• USB 2.0 Ports: 2

• e‐SATA (USB Combo) Port: 1

• Multi‐card Slot: 1

• RJ 45 (LAN) Port: 1

Video

• NVIDIA® Geforce® 310M DDR3 512 MB with TurboCache 256 MB ‐ 2559 MB

※ TurboCache ‐ This technology actively utilizes part of the System Memory when processing large graphic data like 3D graphics. The size of the utilized memory is determined by the Video Memory and System Memory sizes.

※ If TurboCache technology is applied to the Graphics Memory, the System Memory can allot up to 576 MB out of 512 MB and up to 2815 MB out of 4096 MB for large graphic data.

• Mobile Intel® GMA HD (Dynamic Video Memory Technology)

※ The DVMT actively utilizes part of the system memory when processing large graphic data like 3D graphics. Therefore, the size of the graphic memory is displayed as the sum of the actual graphic memory size and the utilized amount of memory, which is decided by the size of system memory.

※ Applications (graphics program, game, etc.) requiring strong graphic processing power may not work properly.

※ Specifications may differ by model type.

Sound

• Realtek High Definition Audio Codec (AL269Q)

• Built‐in Stereo Speakers

※ Simultaneous speaker output while using the built‐in microphone is not supported.

LAN

• Realtek RTL8111E (Gigabit, 1000 Mbps)

• RJ 45 Jack

※ The LAN specifications may differ depending on the model.

Weight

• Full Installation: About 2.3 kg (six‐cell battery included)

• Battery: 317.5 g (6 cells) / 457g (9 cells)

※ Weight descriptions may differ by model type.

■ **System Block Diagram**

LG Chagall QL7 14" BLOCK DIAGRAM

01

PCB STACK UP
6L

LAYER 1 : TOP
LAYER 2 : SGND
LAYER 3 : IN1(High)
LAYER 4 : IN2(Low)
LAYER 5 : SVCC
LAYER 6 : BOT

PROJECT : QL7 (Chagall)
Quanta Computer Inc.

N85

17
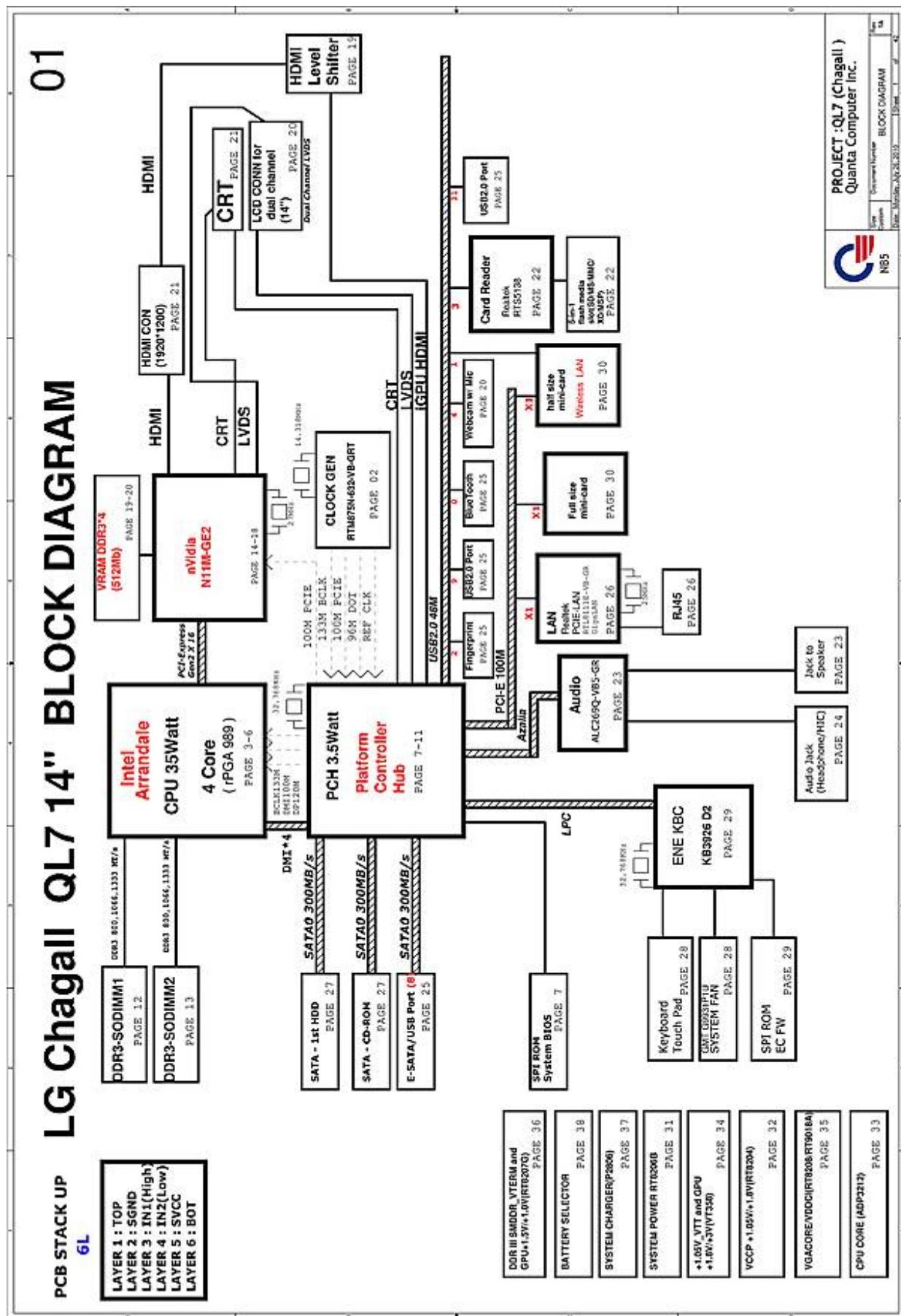
■ Fn key combinations

The following table shows the function of each combination of Fn with a function key.
Function of Fn keys has nothing to do with Operating System.

Fn + F1	Customizable hot keys. (Configurable through OSD settings)
Fn + F2	Customizable hot keys. (Configurable through OSD settings)
Fn + F3	Magnifying hot keys.
Fn + F4	Windows Executes the mode defined in the Power Save Mode. (Example: Standby Mode, Maximum Power Saving Mode)
Fn + F5	When the user presses **Fn + F5** keys, the touchpad mode toggles from **Touchpad Disable**, to **Touchpad Auto‑Disable** (upon connection of external USB mouse), to **Touchpad Enable** in order. (Initialization takes 1 ‑ 2 seconds. It is recommended to use after the initialization.)
Fn + F6	Turns the wireless devices (incl. Wireless LAN and Bluetooth) on and off (Bluetooth is optional, and so it may not be installed in some models.) Through hot key settings in the OSD Tray menu, the user can customize **[Fn]+[F6]** features. Default setting is, for all wireless devices (incl. Wireless LAN and Bluetooth), ON/Off. **If you turned off the wireless device by pressing [Turn off WiFi] in Intel(R) WiFi Utility, you may not be able to turn on the wireless device by pressing the hot key. You need to turn on the wireless device by clicking the icon on the bottom right side of the task bar and pressing [Turn on WiFi] to be able to use the hot key. (This applies only to the models equipped with Intel Wireless LAN)**
Fn + F7	The following screen appears when you press **Fn + F7** keys. (Windows 7 Starter does not support the Monitor Extension mode) Select the mode you want to use and press [Enter] to switch the monitor.
Fn + F8	Switches between the SRS Off, SRS WOW HD, SRS TruSurround HD modes for each pressing the **Fn + F8** keys. (C400 series does not support the SRS function.)
Fn + F9	**Mute** (Sound ON / Sound OFF)
Fn + F10	**System Information**. System summary information will be displayed.
Fn + ▲	Increases LCD brightness, which can have eight different levels.
Fn + ▼	Decreases LCD brightness, which can have eight different levels.
Fn + ◄	Turns down the volume.
Fn + ►	Turns up the volume.
Fn + F11	Fan Control feature. Switches the cooling fan mode between **Normal** and **Silent** for each pressing.
Fn + F12	Hibernates (When OSD is installed)
Fn + Num LK	Allows you to enter numbers (0 ‑ 9) using the embedded numeric keys. If you press **[Fn]+ + [Num Lk]+** again, you can enter text characters (C400 and A410, A405 series).
Fn + Scr Lk	Works as **Num Lk** (C400 and A410, A405 series).
Fn + Delete	Works as **Insert** (C400 and A410, A405 series).

■ Status indicators

The system status indicators show the status of the computer

1 . Power Lamp:

- Blinking: System Standby
- On: The system is running on the AC power or battery.
- Off: The system is turned off or in Hibernates.

2. AC Power and Battery Status Lamp

- Off: The AC adapter is not connected.
- On: The AC adapter is connected.
- Blinking: The battery is charged less than 10 %.
- If you try to turn on the system that has entered the Hibernates mode or been turned off after a low‑battery alarm, the system will not be turned on but the lamp will blink three times.

3. Hard Disk Drive Indicator Lamp

- The lamp is turned on when the HDD is running.

  ※ Do not turn off the power forcibly while the hard disk drive lamp is on. Otherwise, the data may get impaired.

■ BIOS Flash

You Can update BIOS using USB Device (FDD/USB Memory)

Because this system is not equipped with any USB Device, you have to use an external USB Device

for a BIOS update.

In order to boot up with an USB Device, please set Removable Device as the

first boot up drive in the boot menu of BIOS Setup.

· How to update flash Rom in Dos

1. Create 'boot up' flash update USB Device (FDD/USB Memory).
2. Copy BIOS Flash software to the flash update USB Device (FDD/USB Memory).
3. Connect the USB Device for USB Port.
4. Press F12 Key while the "LG LOGO" appears.
5. A while later, the system setup home screen appears.
6. Type in "go.bat ". (x_xxx is Model Name & BIOS version)
7. You can see the BIOS flash process as below.

```
C:\>

C:\>go.bat

C:\>FLASHIT QLXL3B14.fd


          Insyde Flash Utility for InsydeH20
                              Version 1.2t

      Initializing

      File Ioading    100%

    Current BIOS version: QL8L3B14
    Nwe      BIOS version: 3B14


    Updating Block at FFF10000
```

8. After flashing is completed, The computer turn off with automatic movement. .

10. Press [F2] Key, then you can see the BIOS SETUP UTILITY screen as below.

11. It selects the :" Load Optimal Dafault" and it summons a BIOS settings at initial value.
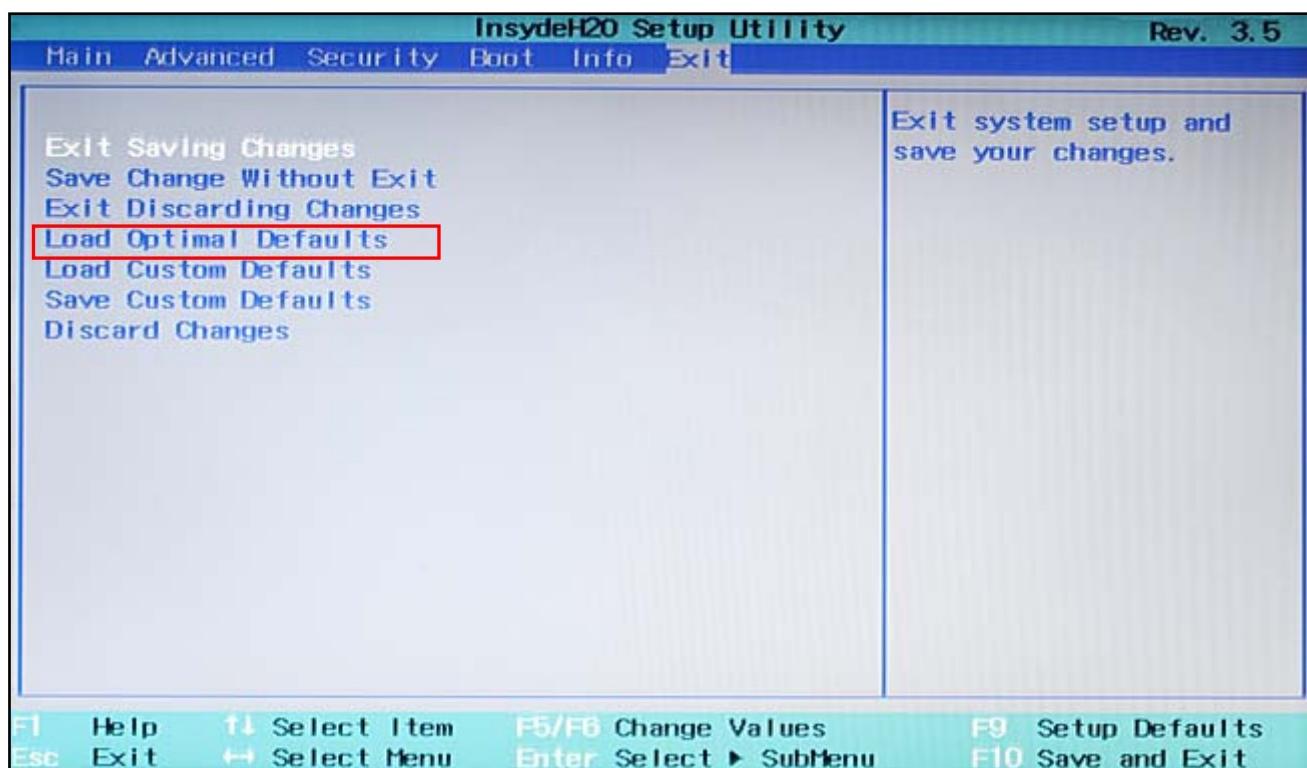
12. It selects the "Exit Saving Changes" and it stores system a settings and the reboot
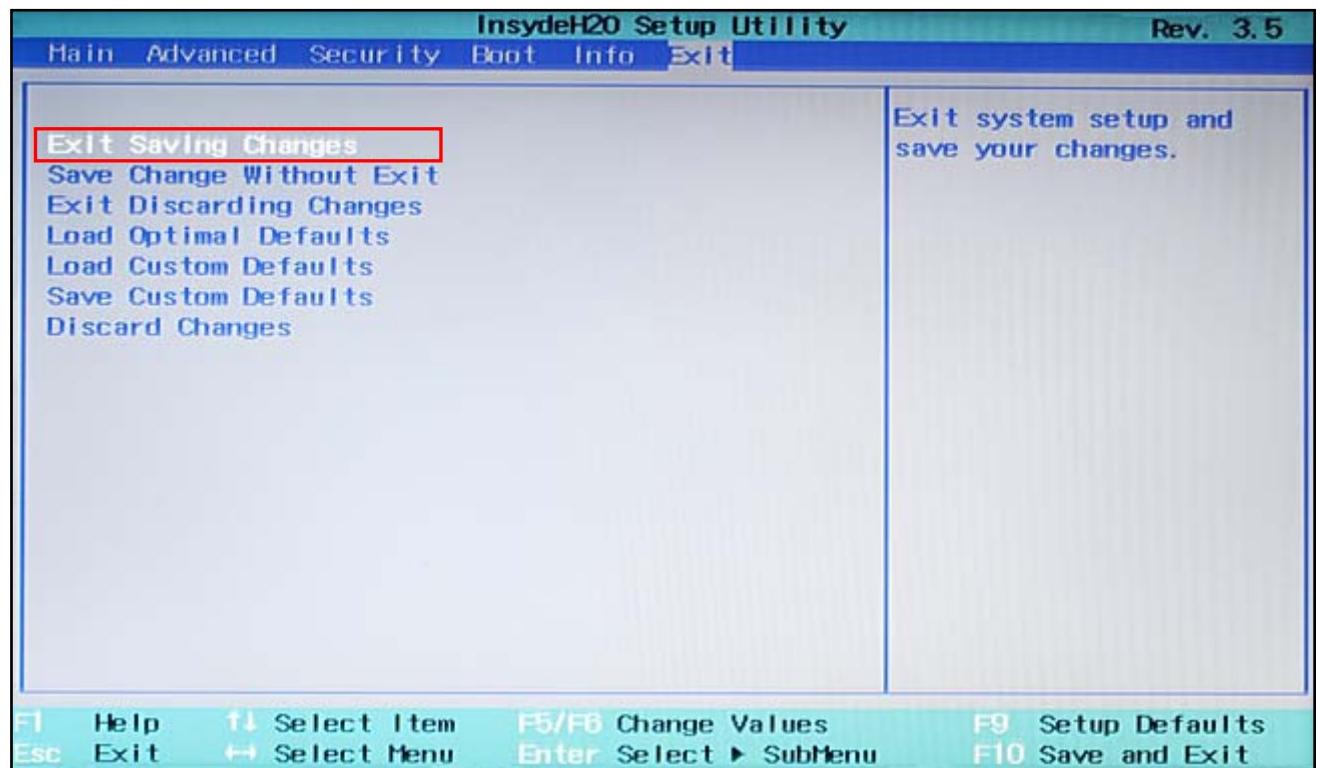
■ BIOS Release Process and Making Bootable CD

1. LGE(Korea) will upload BIOS Image(*.iso) to GCSC(Global Cyber Service Center:http://biz.lgservice.com) when BIOS should be updated.

2. BIOS will include both System BIOS and EC(Embedded Controller) BIOS.

3. Service center can download BIOS file from GCSC and update BIOS according to below procedure.

4. Service center will make Bootable Image CD with Image file(*.iso) as below

   a. Insert empty disc to CD-RW Drive and start Nero "StartSmart".
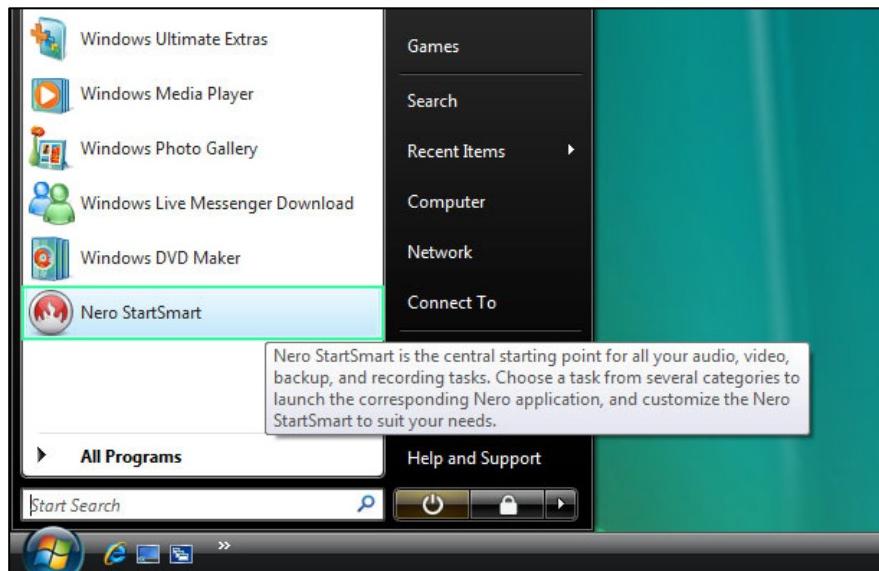

   b. Select "Nero Express".

c. Select "Disc Image or Saved Project"
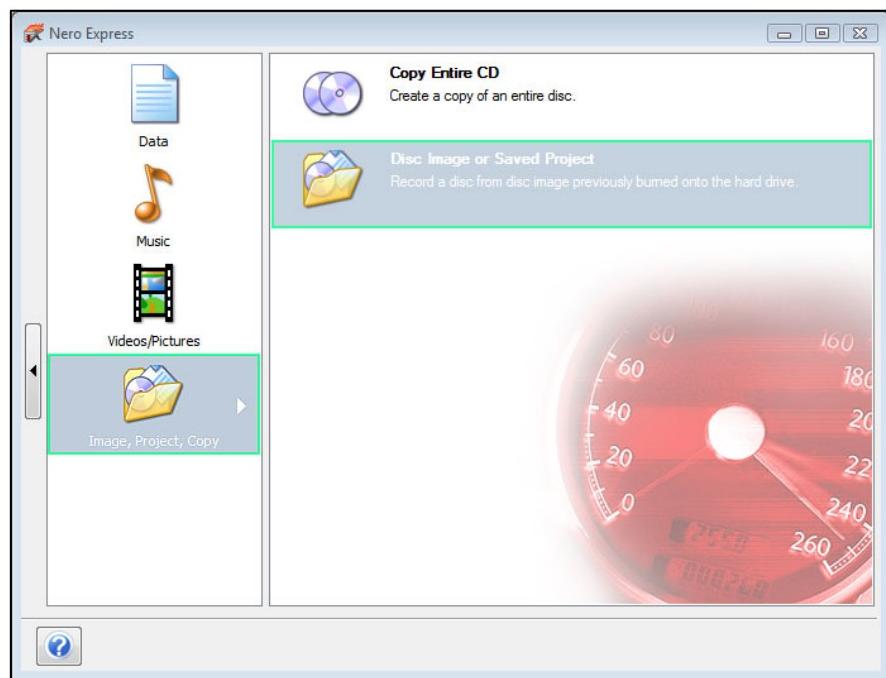
d. Select File Format as "Image Files(*.iso)".

24
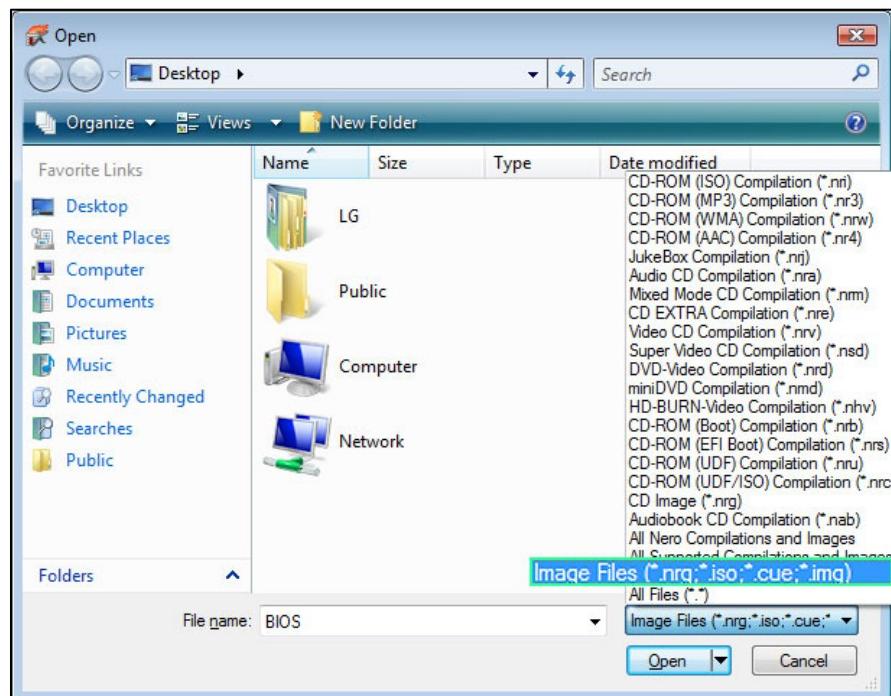
e. Open Image File(*.iso) which is sent from LGE
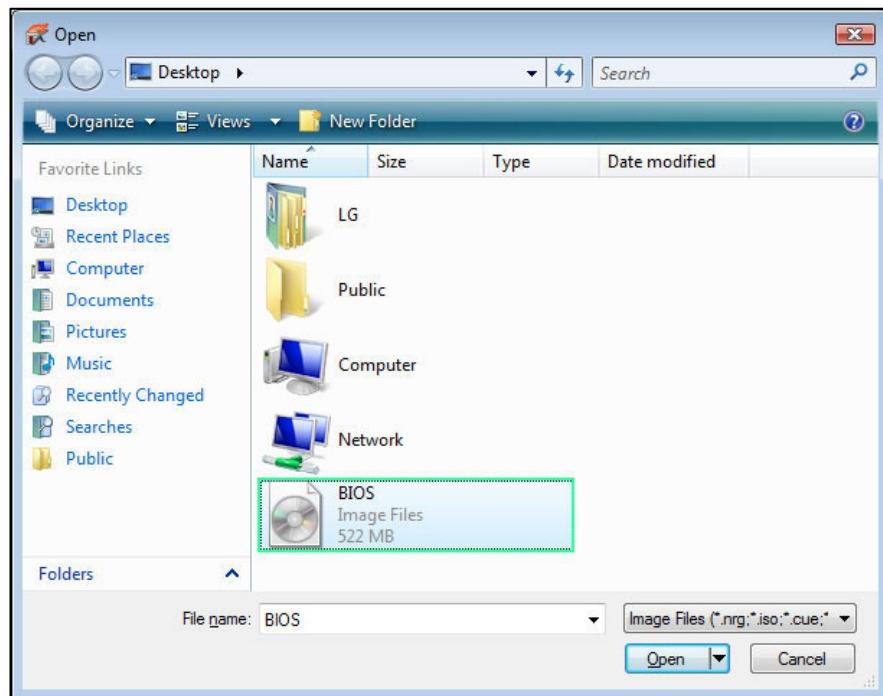
f. Tab Burn then burning will be started

25
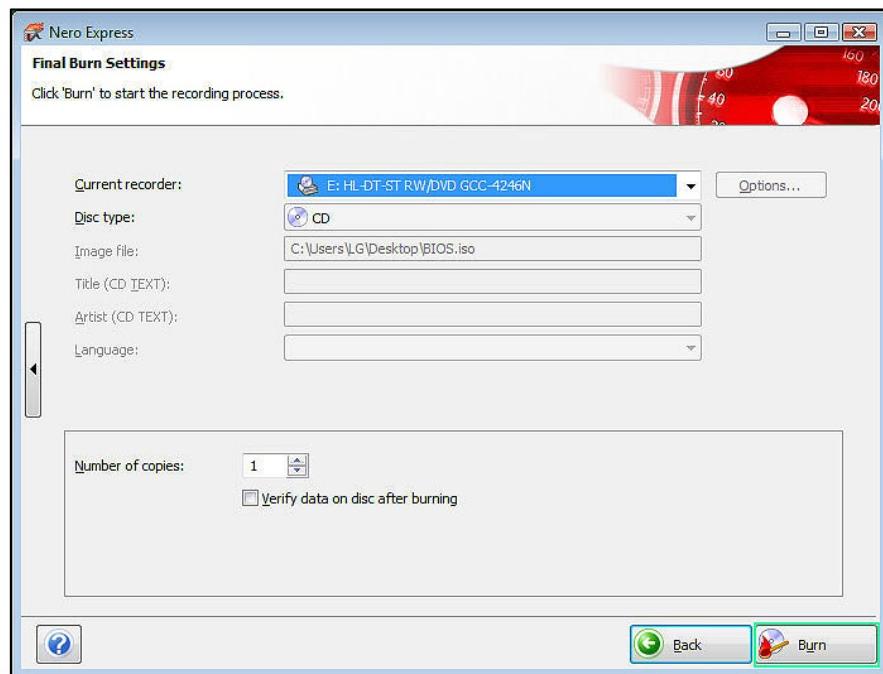
g. Burn process completed as below, and tab "OK
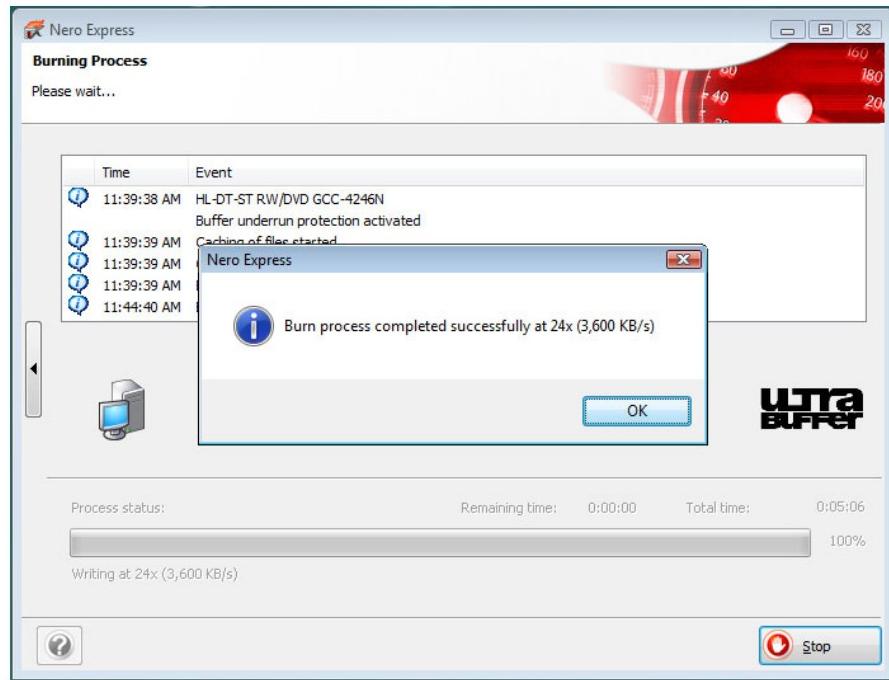
■ BIOS/EC Flash Process

1. Insert Bootable CD in PC, and Turn it on, then PC will boot by DOS mode as below
   (If the EC is not correct or old version, then automatically update EC first and reboot again)
2. Select Boot mode, then press "Enter" Key.

```
Microsoft Windows 98 Startup Menu
-----------------------------------

    1. Start Computer with IDE CDROM
    2. Start Computer with USB CDROM

Enter a choice: 1






F5=Safe    mode Shift+F5= command prompt    Shift+F8=Step-by-Step confirmation [N]
```
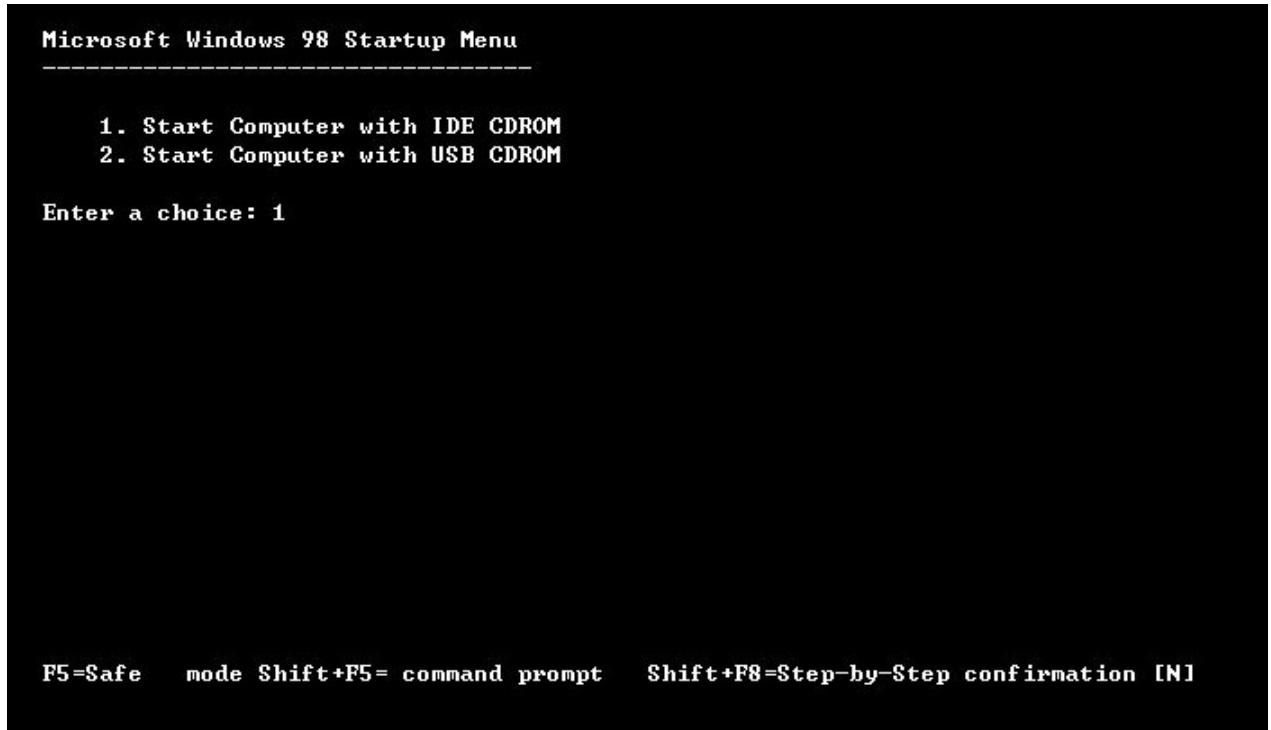
3. Type in LOGO SETTING at the "WIP ID :" then press Enter key (You must use Capital Letter)

```
=================================================
                  LOGO SETTING

             input "LG" or "XNOTE"
=================================================


WIP ID :
```

4. Type in Mode Name at the "WIP ID :" then press Enter key (You must use Capital Letter)

   (You can see the Model Name in ID Label at the bottom Case of PC: "M/N: LMXX-XXXX")

```
============================================
                 MODEL NAME
============================================




WIP ID :
```

5. Type in Serial No at the "WIP ID :" then press Enter key (You must use Capital Letter)
   (You can see the Serial No in ID Label at the bottom Case of PC: "S/N: 412KIXXXXXXXX"(13digits))

```
============================================
     SERIAL        SERIAL        SERIAL
============================================




WIP ID :
```

6. You can see the BIOS flash process as below

```
MSI Frimware Update Utility - Version 3.11
Copyright (C)2005 Micro Star, Inc.  All rights reserved.

ROM File Name : A1034IL1.704
ROM Size : 80000h
Flash Part Name : WINBOND 39L040
BootBlock : 10000h
NVRAM : 10000h ... Reserved


Reading file .......... done
Erasing flash ......... done
Writing flash ......... done
Verigying flash ....... done
Erasing BootBlock ..... done
Writing Bootblock ..... done
```

7. After flashing is completed, you can see the "PASS" on your screen, and reboot your PC
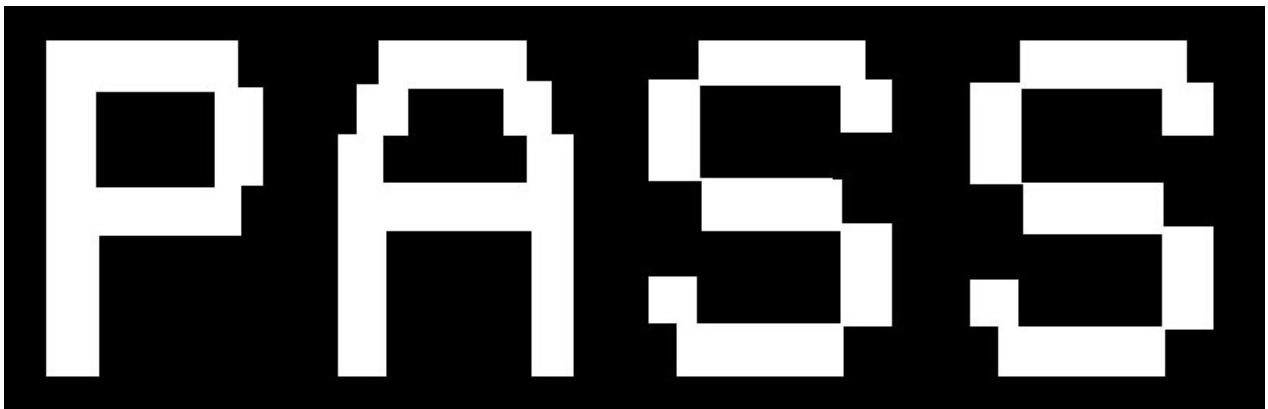
■ BIOS Setup

BIOS (Basic Input and Output System) Setup saves the system configuration in **CMOS RAM**, and check the configurations during startup. Use the **BIOS Setup Utility** to change and save the system environment, hardware configurations, power saving mode, etc.

· Open the BIOS Setup Utility in the following situations :

1. to change the BIOS setup
2. to replace the backup battery
3. system configuration error occurs
4. to change the boot order
5. to set/change a password

Press the power button.

When the **LG** logo appears on the screen, press F2 and enter the **BIOS Setup Utility**.

■ Using the keys

The keys used in the BIOS Setup Utility and their functions are described at the bottom.

· $\boxed{F1}$, $\boxed{Alt}$ + $\boxed{H}$: General Help

Display the descriptions of the keys used in the setup utility.

· $\boxed{\downarrow}$, $\boxed{\uparrow}$: Select Item

Navigate and select items in the setup utility. The selected item becomes highlighted.

· $\boxed{\leftarrow}$, $\boxed{\rightarrow}$: Select Menu

Move to another menu.

· $\boxed{-}$ / $\boxed{+}$, $\boxed{\text{Space Bar}}$: Change Values

Change the value of a selected item.

· $\boxed{F9}$: Load Default Configuration

Display Setup Confirmation window. Press Enter to load default configuration.

· $\boxed{\text{Enter} \downarrow}$: Select Sub-Menu

Some items have sub-menus. Display the sub-menu for a selected item.

· $\boxed{F10}$: Save and Exit

Display Setup Confirmation window. Press **Enter** to save and exit.

· $\boxed{Esc}$: Exit

In a sub-menu, press **Esc** to move to the previous window. In Main menu, click **Esc** to move to Exit menu.

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■ Main menu

· **System Time**

Current time. To change the value, press <+> or <–> key.

· **System Date**

Current date. To change the value, press <+> or <–> key.

· **SATA Hard Drive**

This shows the description of the drive connected to the SATA port.

To change the settings of the connected drive, click **<Enter>** after selecting this option.

· **CD-ROM/DVD-ROM**

This shows the description of the drive connected to the ODD drive port.

To change the settings of the connected drive, click **<Enter>** after selecting this option.

■ Advanced menu
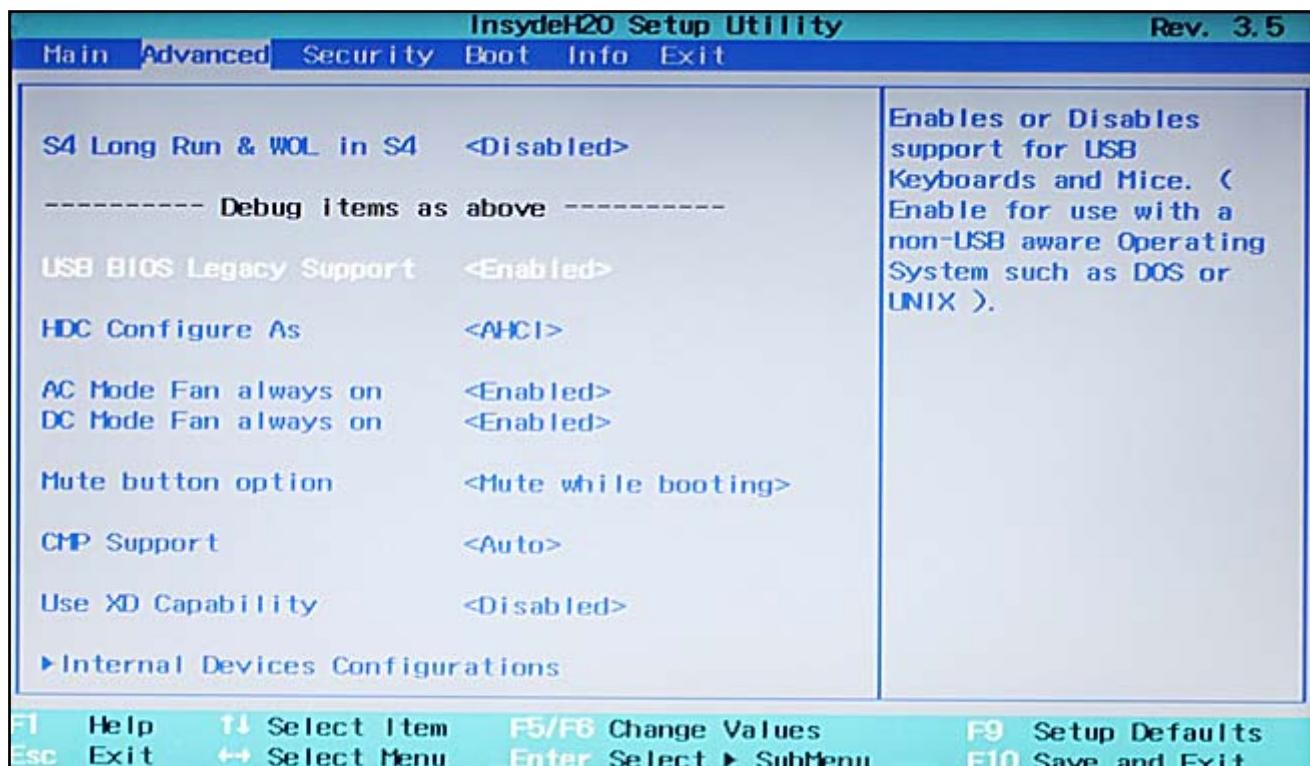
· S4 Long Run & WOL in S4

This is for the menu to supply Wake on Lan.
You can push the "enable" when you want to use
the Wake on Lan.

· USB BIOS Legacy Support

This enables to use the USB devices in the MS
DOS environment.

· HDC Configure As

This configures the compatibility settings for the
SATA controller.

· AC Mode Fan always on

Select any of Normal, Silent, and Cool for the
operating speed of CPU cooling fan (for AC
power).

· DC Mode Fan always on

Select any of Normal, Silent, and Cool for the
operating speed of CPU cooling fan (for DC
power).

· Mute button option

Set whether or not to support the Mute function (Fn +
F9) during the system startup.

· CMP Support

Set whether or not to support for CMP.

· Use XD Capability

XD Bit (Execute Disable Bit) secure function
based on hardware is decreasing exposure
against virus and attack of malignant code and
also is preventing the execute of malware and the
spread to network or other computers.

· Internal Devices Configurations

Set whether or not to use the devices such as Auiod,
LAN, Wireless, Card reader, Express carder, and
such.

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■ Security menu

```
                    InsydeH2O Setup Utility              Rev. 3.5
 Main  Advanced  Security  Boot  Info  Exit

                                              Install or Change the
 Supervisor Password      Not Installed       password and the length
 User Password            Not Installed       of password  must be
                                              greater than one
 Set Supervisor Password                      character.
 Set User Password
 Set All Hdd Password

 F1   Help      ↑↓ Select Item    F5/F6 Change Values      F9  Setup Defaults
 Esc  Exit      ↔  Select Menu    Enter Select ▶ SubMenu    F10 Save and Exit
```

· **Supervisor Password**

The password setting prevents not allowed users from using the notebook computer. The password is not set when starting the system for the first time. When the system is turned on, any other user cannot change the BIOS settings without entering the specified password.

· **User Password**

Set User Password is for setting the password lower than the one set in Set Supervisor Password. Set User Password is active only when the supervisor password is set.

· **Set Supervisor Password**

Set Supervisor Password.

· **Set User Password**

Set User Password.

· **Set All Hdd Password**

Set the HDD password.

■ Boot menu


```
                    InsydeH20 Setup Utility              Rev. 3.5
  Main  Advanced  Security  Boot  Info  Exit

                                                 Legacy Boot Order
                                                 Settings
  Boot Menu               <Enabled>
  PXE Boot to LAN         <Enabled>

  ▶Boot Device Priority




  F1   Help      ↑↓ Select Item    F5/F6 Change Values    F9  Setup Defaults
  Esc  Exit      ↔  Select Menu    Enter Select ▶ SubMenu  F10 Save and Exit
```

**· Boot Menu**

Set whether or not to use Booting Device

· PXE Boot to LAN

Set whether or not to use PXE Boot to LAN

· Boot Device Priority

Select the desired device drive by using the arrow buttons and change its booting sequence by using the [+] or [-] key.

■ Info menu

```
                    InsydeH2O Setup Utility                    Rev. 3.5
  Main  Advanced  Security  Boot  Info  Exit

  BIOS Version          QL7L3A21
  KBC Version           PQ3A21
  Serial Number         008QTRA008214
  Intel ME Version      6.0.2.1194
  SLP 2.1               Enabled

  Processor Type        Intel(R) Core(TM) i3 CPU
                        M 380  @ 2.53GHz

  L2 Cache RAM          256 KB
  L3 Cache RAM          3072 KB

  Total Memory          2048 MB
  Slot1 Memory          2048 MB
  Slot2 Memory          [Not Installed]

  F1  Help      ↑↓ Select Item    F5/F6 Change Values      F9  Setup Defaults
  Esc Exit      ↔  Select Menu    Enter Select ▶ SubMenu   F10 Save and Exit
```

· **BIOS Version**

This shows the Version of BIOS.

· **KBC Version**

This shows the Version of KBD firm ware.

· **Serial Number**

This shows the serial number of the product.

· **Intel ME Version**

There is a small and low electric Intel management engine (intel ME) in the lower system.
The lower system can perform various works during dormant, processing of the boot, and running on the system.

· **SLP 2.1**

The Vista OS protection device will be able to use from LG.

· **Processor Type**

This shows the type of the CPU installed in the system.

· **L2 Cache RAM**

This shows the size of L2 Cache RAM for the CPU.

· **L3 Cache RAM**

This shows the size of L3 Cache RAM for the CPU.

· **Total Memory**

This is for display only. This shows size of system memory.

· **Slot 1–2 Memory**

This shows the size of the memory installed in the memory slot.

■ Exit menu
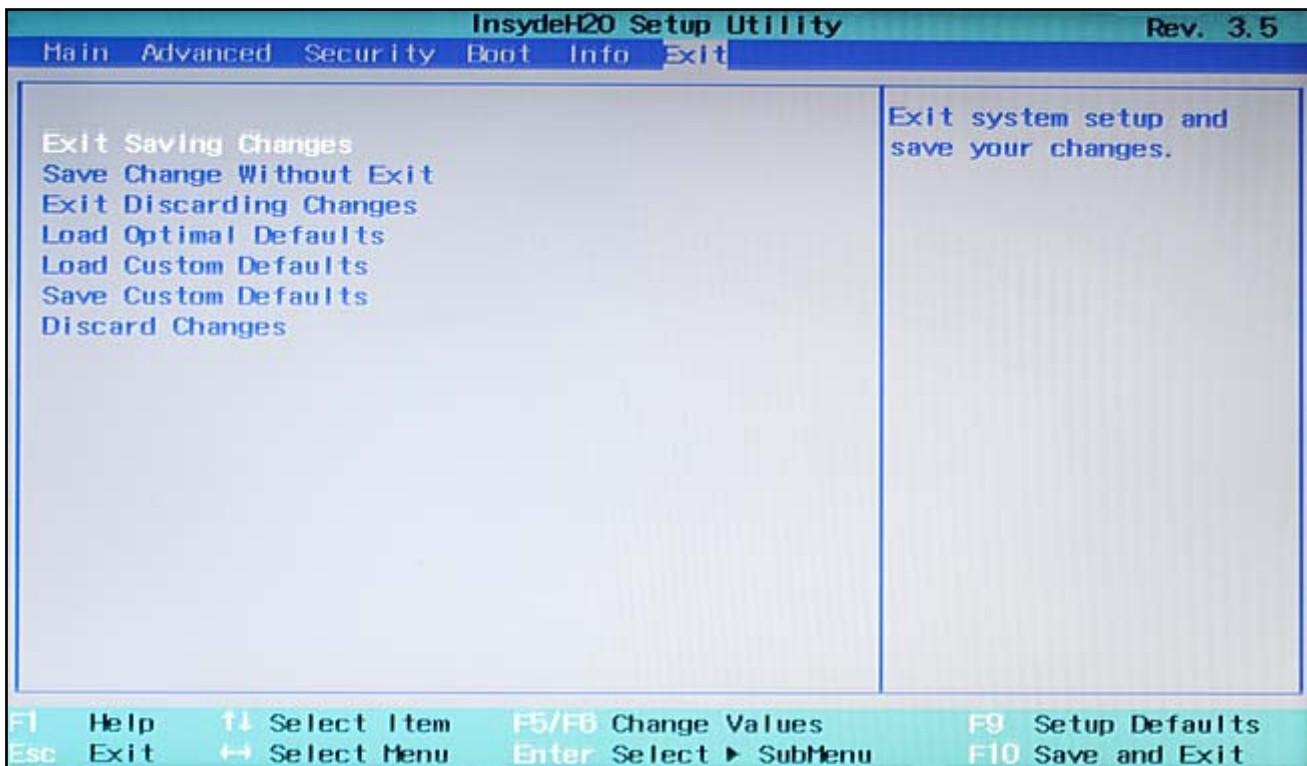
· Exit Saving Changes

Save the changes you have made and exit the utility.

· Save Change Without Exit

Save the changes you have made.

· Exit Discarding Changes

Exit the utility without saving the changes you have made.

· Load Optimal Defaults

This changes the parameters in the Setup menu to the factory default settings. When it is selected or [F9] key is pressed, the confirmation message appears. Click [Yes] to change the settings.

· Load Custom Defaults

This returns the user-defined settings for the parameters in the Setup menu.

· Save Custom Defaults

This saves the desired values for each parameter in the Setup menu.

· Discard Changes

This returns to the factory default settings for each parameter in the Setup menu.

■ Backup and Restore Security Platform Data

Security Platform Backup includes all data required in case of emergency. After a hardware or storage media failure or a Trusted Platform Module failure, Security Platform Restoration reestablishes access to Security Platform Features for all users.

In addition you can backup and restore your Personal Secure Drive data. Data from other applications using the Security Platform Solution (e.g. Secure e-mail) is not included in Security Platform backup.

■ Backup scope

Security Platform backup comprises the following data:

Security Platform Credentials and Settings	
Backup Contents	A copy of the user-specific credentials and settings which are stored on the Security Platform.
Purpose	Restoration of user-specific credentials and settings after a hardware or storage media failure. Otherwise users could not access Security Platform Features anymore and user data would be lost.
Archives	• **Automatically written Backup Archive** ("System Backup Archive", e.g. file SPSystemBackup.xml and folder SPSystemBackup): Set up by Security Platform Administrator. Contains credentials and settings of all Security Platform Users (for one or multiple Security Platform computers). Also contains computer identification and user identification, which are used to match computers and users during the restoration process. • **Manually written Backup Archive** (e.g. SPBackupArchive.xml): Created by Security Platform User. Contains credentials and settings of one Security Platform User (for one Security Platform computer). Also contains computer identification and user identification, which are used to match computer and user during the restoration process.
Emergency Recovery	
Backup Contents	All Security Platform Basic User Keys, encrypted specifically for Emergency Recovery.
Purpose	Re-encryption of all Basic User Keys after a Trusted Platform Module failure. In this case a new Security Platform has to be set up and a new owner key is created. Emergency Recovery allows the re-encryption of Basic User Keys from the old owner key to the new one. Otherwise users could not access Security Platform Features anymore and user data would be lost.
Archives	• Emergency Recovery data is included in **automatically written Backup Archives**. • **Emergency Recovery Token** (e.g. SPEmRecToken.xml): Created by Security Platform Administrator. Protected with a dedicated password. Is required for a restoration of Emergency Recovery data.

Personal Secure Drive	
Backup Contents	A copy of the PSD encrypted data and configuration settings.
Purpose	Restoration of PSD encrypted data and configuration settings after a hardware or storage media failure. Otherwise users could not decrypt their PSD data anymore. **Notes:** • In contrast to the PSD Backup, standard hard disk backup tools produce unencrypted backups. • Lost PSD credentials can only be restored via <u>Personal Secure Drive Recovery</u>.
Archives	• PSD configuration settings are included in both **automatically written Backup Archives** and **manually written Backup Archives**. • **PSD backup file** (e.g. SpPSDBackup.fsb): A backup copy of the PSD image file may be created during a Security Platform User's manual backup.

■ Restoration Cases

Depending on the type of emergency there are different restoration cases

Restoration Case	Affected Restoration Scope
Broken hard disk or lost data	Security Platform Credentials and Settings, Personal Secure Drive
New Trusted Platform Module	Emergency Recovery
New Security Platform to be initialized	Emergency Recovery, Security Platform Credentials and Settings, Personal Secure Drive

■ How to Backup and Restore

How to configure automatic backups ("System Backup")	Software Component to use
Administrative Task: Configure automatic backups for all users (including Security Platform Credentials and Settings, Emergency Recovery and PSD configuration settings).	If Security Platform is not yet initialized: *Initialization Wizard* If Security Platform is already initialized: *Settings Tool - Backup - Configure...*
How to backup ("Manual Backup")	**Software Component to use**
User Task: Run backup manually for the current user.	*Settings Tool - Backup - Backup...*
How to restore	**Software Component to use**
Administrative Task: Prepare restoration for certain users. User Task: Run restoration manually for current user. If restoration has been prepared for current user, then complete the restoration. If a manually written Backup Archive is available and no Emergency Recovery data needs to be restored, then a user can perform restoration without preparation by an administrator.	*Settings Tool - Backup - Restore...*

■ Backup

With this page you can configure automatic Security Platform backups.

The following table gives hints on how to use this wizard page.

Wizard Page Element	Explanation
Backup location: Browse...	Security Platform credentials and settings will be regularly saved to a Backup Archive. Type in path and file name or browse for it. An automatically written Backup Archive consisting of an XML file and a folder with the same name will be created, e.g. file SPSystemBackup.xml and folder SPSystemBackup. Please use the extension *.xml.
Schedule...	A scheduled backup will be created. Click here to view and modify the backup scheduling. Please note that automatic backups are only executed if your PC is not shut down at the scheduled time. Please note that the user account chosen for the scheduled backup must be member of the group "Administrators" or "Backup Operators".

■ Infineon Platform Security Backup

With this page you can backup and restore Security Platform credentials, Security Platform settings and Personal Secure Drives.
If Enhanced Authentication is enabled, you can also create backups of your authentication device.

> **Availability of page:** This page is only available on an initialized Security Platform, if one of the following conditions is fulfilled:
>
> •The current user has administrative rights.
> •The current user is an initialized Security Platform User, and the policy *Allow User Enrollment* is enabled.
>
> **Buttons:**
>
> •Buttons for administrative tasks are disabled for users without administrative rights.
> •Buttons are disabled, if corresponding functions are not available in a certain Security Platform state.

The following table describes all backup and restore functions.

Explanation
Click here to set up automatic Security Platform backups. Infineon Security Platform Initialization Wizard will be started. This feature is only available, if the current user account has administrative rights.
Click here to start a manual backup of your Security Platform Settings and credentials. If you have configured Personal Secure Drive (PSD), you can backup your PSD too. The Infineon Security Platform Backup Wizard will be started. This button is disabled, if the Infineon Security Platform is disabled, not yet set up or the user is not set up.
Click here to start a manual restore of archived Security Platform Settings and credentials. If you have a backup of your Personal Secure Drive (PSD), you can restore your PSD too. The restore part of the Infineon Security Platform Backup Wizard will be started. This button is disabled, if the Infineon Security Platform is disabled or not yet set up.
Click here to create a backup authentication device. This feature is only available, if Enhanced Authentication is enabled.

Chapter 4. Symptom-to-part index

The symptom-to-part index in this section lists symptoms and errors and their possible causes.

The most likely cause is listed first.

Note

If replacing a part (FRU) does not solve the problem, put the original part back in the computer.

Do not replace a non-defective FRU.

■ Power system checkout

· To verify a symptom, do the following :

1. Power off the computer.

2. Remove the battery pack.

3. Connect the AC adapter.

4. Check that power is supplied when you power on the computer.

5. Power off the computer.

6. Disconnect the AC adapter and install the charged battery pack.

7. Check that the battery pack supplies power when you power on the computer.

· If you suspect a power problem, see the appropriate one of the following power supply checkouts :

1. Checking the AC adapter

2. Checking the operational charging

3. Checking the battery pack

4. Checking the backup battery


· Checking the AC adapter

If the power-on indicator does not turn on, check the power cord of the AC adapter for correct continuity and installation.

If the computer does not charge during operation, go to "Checking operational charging."

To check the AC adapter, do the following :

1. Unplug the AC adapter cable from the computer.
2. Measure the output voltage at the plug of the
   AC adapter cable. See the following figure :
3. If the voltage is not correct, remove the power code
   form AC adapter.
4. 10 seconds later, connect the power code, then measure the output voltage.
5. If the voltage is not correct, change the AC adapter.
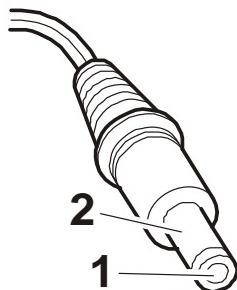
Pin	Voltage (V dc)
1	+18.05 ~ +19.95
2	Ground

· If the voltage is not correct, replace the AC adapter.

· If the voltage is acceptable, do the following :

  1. Replace the system board.

  2. If the problem persists, check the AC adapter whether it is correct product or not.

Note

Noise from the AC adapter does not always indicate a defect.

· Checking operational charging

  1. To check whether the battery charges properly during operation, use a discharged battery pack or a
    battery pack that has less than 50% of the total power remaining when installed in the computer.
    Perform operational charging. If the battery status indicator or icon does not turn on, remove the battery
    does not turn on, replace the battery pack.

  2. If the charge indicator still does not turn on, replace the system board.
    Then reinstall the battery pack.

Note

Do not charge battery pack, when its temperature is below 0℃ or above 75℃.

· Checking the battery pack

  1. Open the Power Meter window by clicking **Start** → **Control Panel** → **Power Options** and then;
    check the total power remains. Battery charging does not start until the power Meter shows that less
    than 95% of the total power remains; under this condition the battery pack can charge to 100% of its
    capacity. This protects the battery pack from being overcharged or from having a shortened life.

  2. To check the status of your batter, move your cursor to the Power Meter icon in the icon tray of the
    Windows taskbar and wait for a moment (but do not click), and the percentage of battery power
    remaining is displayed. To get detailed information about the battery, double-click the Power Meter icon.

Note

If the battery pack becomes hot, it may not be able to charge. Remove it from the computer and
Leave it at room temperature for a while. After it cools down, reinstall and recharge it.

· The Characteristics of the battery pack

1. Self-discharge

The battery gradually loses its power over time without ever being used.

2. Periodic full discharge / charge

Frequent recharge of the battery pack can reduce the capacity of the battery pack. When this happens, you can perform the full discharge / charge to improve the capacity. You should perform periodic full discharge /charge once every 30~60 days.

You should always use the battery until its power is low; then fully charge the battery.

3. Trickle charge

If the temperature of the battery pack drops below 10℃ , the trickle charging begins.

The trickle charging may take 32 hours for the battery pack to be fully charged.

· To check the battery pack, do the following :

1. Power off the computer.

2. Remove the battery pack and measure the voltage between battery terminals 7(+) and 9(-).

   See the following figure :
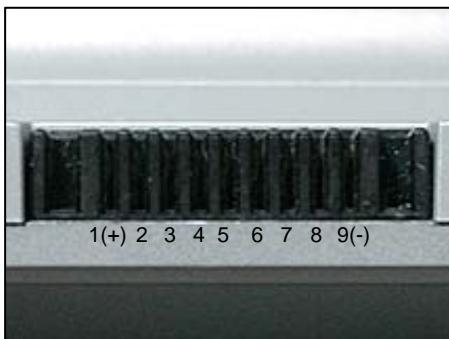
Terminal	Voltage (V dc)
9	Ground(-)
1	+0V ~ +16.8V (8-cell)

3. If the voltage is still less than 14.6Vdc after recharging, replace the battery.

4. If the voltage is more than 14.6Vdc, measure the resistance between battery terminals 7 and 9.

   The resistance must be 470ohm.

5. If the resistance is not correct, replace the battery pack. If the resistance is correct, replace the system board.

Note

Charging will take at least 3 hours.

Note

Battery is an expendable supplier, so its capacity and used time can be reduced by using the computer.

■ Numeric error codes

Symptom / Error	FRU or action, in sequence
0200 Fixed disk failure (The hard disk is not working)	1.Reset the hard-disk drive. 2.Load Setup Defaults in BIOS Setup Utility. 3.Hard-disk drive. 4.System board.
0210 Stuck Key error	1.Check the keyboard if it is pressed. 2.Replace the keyboard.
0211 Keyboard error	Run interactive tests of the keyboard and the auxiliary input device.
0212 Keyboard Controller Failed	System board.
0220 Monitor type error - Monitor type does not match the one specified in CMOS.	Load Setup Defaults in BIOS Setup Utility.
0230 System RAM error - System RAM Failed at offset.	1.DIMM 2.System board
0231 Shadow RAM error - Shadow RAM failed at offset	System board
0232 Extended RAM error - Extended RAM Failed at address line	1. DIMM 2. System board
0250 System battery error – System battery is dead	Replace the backup battery and run BIOS Setup Utility to reset the time and date.

Symptom / Error	FRU or action, in sequence
0251 System CMOS checksum bad – System CMOS checksum is not correct. – Default configuration used.	Replace the backup battery and run BIOS Setup Utility to reset the time and date.
0252 Password checksum bad – The password is cleared.	Reset the password by running BIOS Setup Utility.
0260 System timer error	1. Replace the backup battery and run BIOS Setup Utility to reset the time and date. 2. System board.
0271 Check date and time settings – Date and time error.	Run BIOS Setup Utility to reset the time and date.
0280 Previous boot incomplete - Default configuration used	1. Load "Setup Default" in BIOS Setup Utility. 2. DIMM. 3. System board.
0281: Memory Size found by POST differed from EISA CMOS	Load Setup Defaults in BIOS Setup Utility.
02B0 Diskette drive A error	Set up the diskette type in BIOS Setup Utility.
02B1 Diskette drive B error	Set up the diskette type in BIOS Setup Utility.
02B2 Incorrect drive A type – Floppy diskette drive error	1. Floppy diskette drive. 2. External FDD cable. 3. I/O card.
02B3 Incorrect Drive B type	1. Floppy diskette drive. 2. External FDD cable. 3. I/O card.
02D0 System cache error – Cache disabled (RAM cache failed and BIOS disabled)	1. Load "Setup Default" in BIOS Setup Utility. 2. System board.
02F4 EISA CMOS not writable	1. Load "Setup Default" in BIOS Setup Utility. 2. Replace the backup battery. 3. System board.
02F5 DMA test failed	1. DIMM 2. System board
02F6 Software NMI failed	1. DIMM 2. System board

Symptom / Error	FRU or action, in sequence
02F7 Fail – Safe timer NMI failed	1. DIMM 2. System board
0611 IDE configuration changed	1. Load Setup Defaults in BIOS Setup Utility. 2. System board.
0612 IDE configuration error	1. Load Setup Defaults in BIOS Setup Utility. 2. System board.
0613 Com A configuration changed	1. Load Setup Defaults in BIOS Setup Utility. 2. System board.
0614 Com A configuration error	1. Load Setup Defaults in BIOS Setup Utility. 2. System board.
0615 Com B configuration changed	1. Load Setup Defaults in BIOS Setup Utility. 2. System board.
0616 Com B configuration error	1. Load Setup Defaults in BIOS Setup Utility. 2. System board.
0617 Floppy configuration changed	1. Load Setup Defaults in BIOS Setup Utility. 2. System board.
0618 Floppy configuration error	1. Load Setup Defaults in BIOS Setup Utility. 2. System board.
0619 Parallel port configuration changed	1. Load Setup Defaults in BIOS Setup Utility. 2. System board.
061A Parallel port configuration error	1. Load Setup Defaults in BIOS Setup Utility. 2. System board.

■ Error message

Symptom / Error	FRU or action, in sequence
Device address conflict.	1. Load Setup Defaults in BIOS Setup Utility. 2. Backup battery. 3. System board.
Allocation error for device.	1. Load Setup Defaults in BIOS Setup Utility. 2. Backup battery. 3. System board.
Failing bits: nnnn.	1. DIMM. 2. System board.
Invalid System Configuration Data.	1. DIMM. 2. System board.
I/O Device IRQ Conflict.	1. Load Setup Defaults in BIOS Setup Utility. 2. Backup battery. 3. System board.
Operating System not found.	1. Check that the operating system has no failure and is installed correctly. 2. Enter BIOS Setup Utility and see whether the hard-disk drive and the diskette drive are properly identified. 3. Reset the hard-disk drive. 4. Reinstall the operating system. 5. Diskette drive. 6. Hard-disk drive. 7. System board.
Hibernation error.	1. Restore the system configuration to what it was before the computer entered hibernation mode. 2. If memory size has been changed, re-create the hibernation file.
FAN error.	Fan.
Thermal sensing error.	System board.

■ LCD-related symptoms

> **Note**
>
> Before removing or disassembling LCD, power off the computer, unplug all power cords from electrical
>
> outlets, remove the battery pack also.

Symptom / Error	FRU or action, in sequence
LCD screen becomes dark suddenly.	Check out Battery Miser.
Nothing displayed on LCD screen.	1. Check out Battery Miser. 2. Choose Never in the Turn off Monitor item on Power Options Properties. 3. Check the power save mode switch if it is pressed by something. 4. Check the System is in standby or hibernation mode.
LCD backlight not working. LCD too dark. LCD brightness cannot be adjusted.	1. Reconnect inverter to the board connector. 2. Replace inverter. 3. LCD Assembly. 4. System board.
LCD color cannot be adjusted. LCD screen abnormal. Characters missing pixels. LCD screen unreadable. Wrong color displayed.	1. Reset all LCD connectors. 2. Replace LCD cable. 3. LCD Assembly. 4. System board.
Horizontal or vertical lines displayed on LCD	LCD Assembly.
Power-on indicator on, and a blank\LCD during POST.	LCD Assembly. System board.

■ Indeterminate problems

· You are here because the diagnostic tests did not identify which adapter or device failed, wrong devices

  are installed, a short circuit is suspected, or the system is inoperative.

  Follow these procedures to isolate the failing FRU (do not isolate FRUs that have no defects).

· Verify that all attached devices are supported by the computer.

· Verify that the power supply being used at the time of the failure is operating correctly.

 1. Power off the computer

 2. Visually check each FRU for damage. Replace any damaged FRU.

 3. Remove or disconnected all of the following devices :

     a. Non-LG devices.

     b. Printer, mouse, and other external devices.

     c. Battery pack.

     d. PC cards.

     e. ODD (CD-ROM, Combo) drive or FDD drive in the Bay.

     f. Hard-disk drive.

Note

Use the other memory card because it needs when operating computer.

---

 4. Power on the computer.

 5. Determine whether the problem has changed.

 6. If the problem does not recur, reconnect the removed devices one at a time until you find the failing FRU.

 7. If the problem remains, replace the following FRUs one at a time.

    (do not replace a non-defective FRU)

     a. LCD Assembly (Check external monitor whether the same problem recurs or not).

     b. Keyboard.

     c. Keydeck (TouchPad and Scroll Button Assembly).

     d. System board.

Chapter 5. Removing and replacing a part (FRU)

> **Danger**
>
> Before removing any FRU, power off the computer, unplug all power cords from electrical
> outlets, remove the battery pack, and then disconnect any interconnecting cables.

> **Caution**
>
> Before the computer is powered on after FRU replacement, make sure that all screws, springs,
> and other small parts are in place and are not loose inside the computer. Verify metal flakes can
> cause electrical short circuits.

> **Note**
>
> -As for the screw, every Torque 3 ±0.2Kgfcm(0.196Nm)
>
> -For further information on Removing and Replacing a Part(FRU), refer to Explore view.

■ 1010 Battery Pack

1. Push the battery latch in the direction shown below; then slide the battery pack out of the slot.

2. Remove the Battery Pack.

■ 1020 HDD

※ Remove the following parts in order before replacing this part

a. Battery Pack(1010)

1. Remove the 3 screw.

2. Remove the HDD cover.

3. Remove the HDD.

4. Remove the 4 screw.
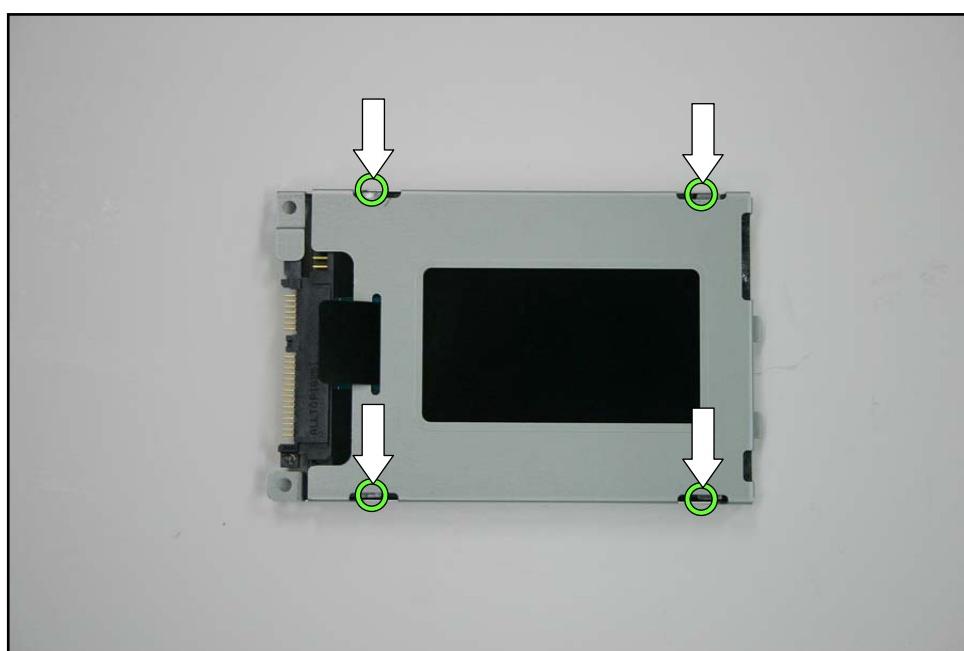
No.	FRU No.	Specification	Qty
1	FAB30479801	M3x3	4EA

5. Remove the HDD Shield.

■ 1030 Memory Cover

※ **Remove the following parts in order before replacing this part**
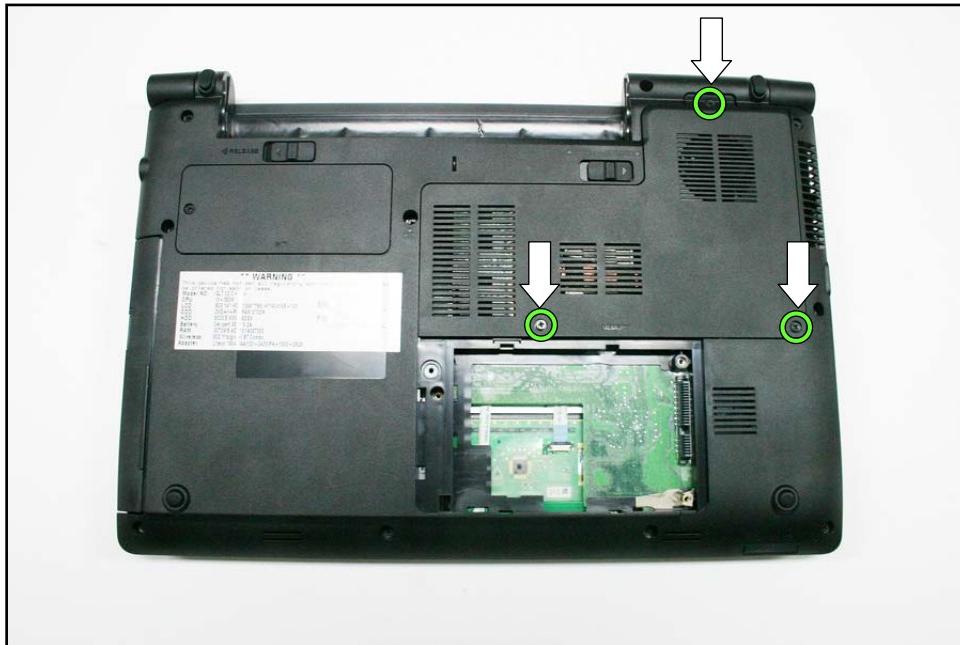
a. Battery Pack(1010)

1. Remove the 3 screw.

2. Remove the memory cover.

■ 1040 ODD

※ Remove the following parts in order before replacing this part

a. Battery Pack(1010) / Memory / ODD Cover(1020)

1. Remove the 1 screw.

No.	FRU No.	Specification	Qty
1	FAB30248901	M2.5x6.5	1EA

2. pushes separates with arrow ticket direction.
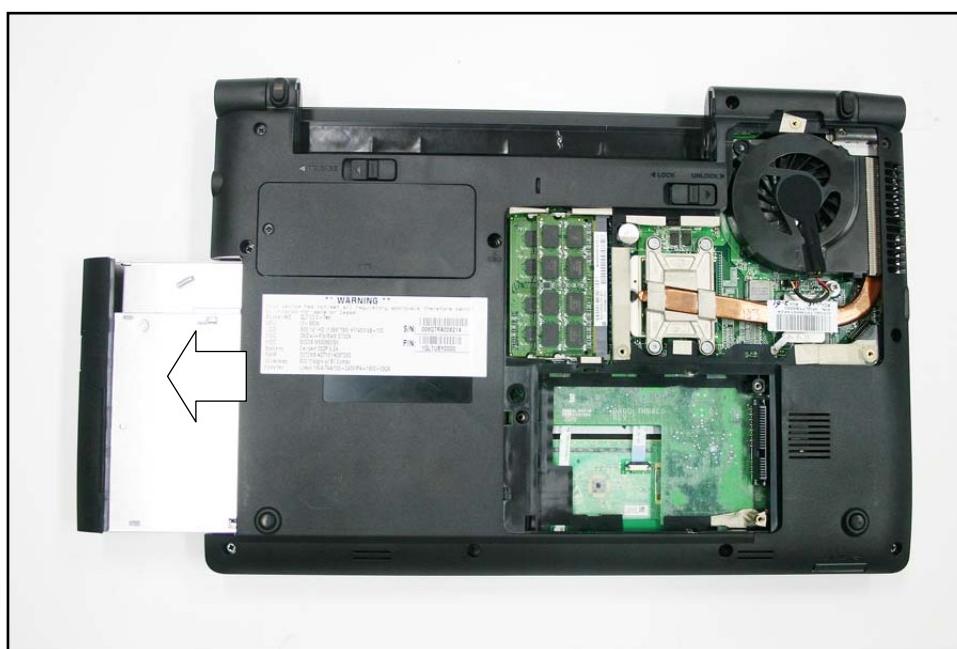
3. Remove the ODD.

4. Remove the 2 screw and ODD Bezel.

Bezel
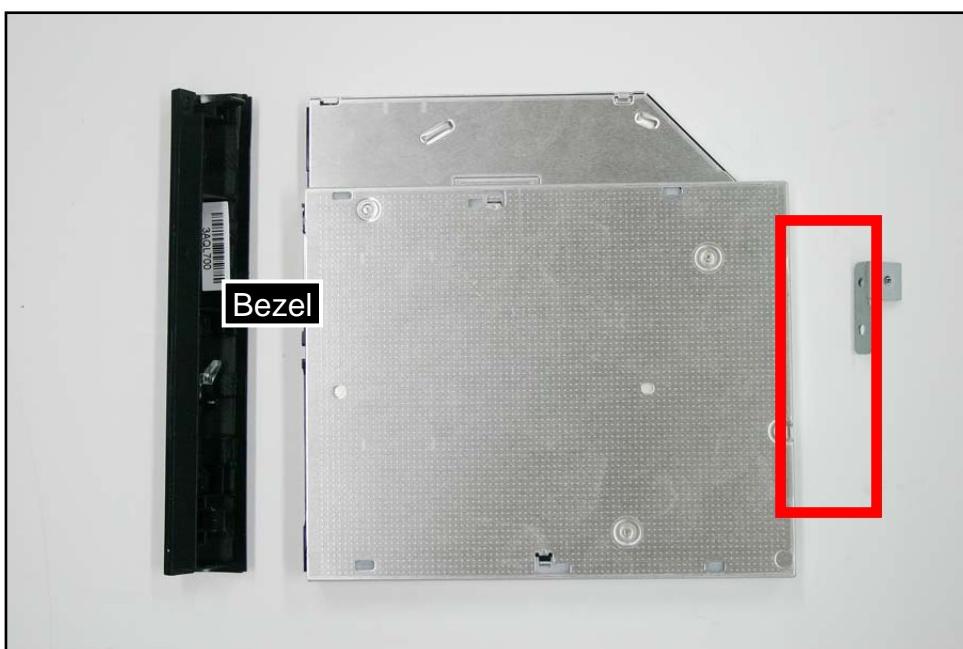
No.	FRU No.	Specification	Qty
1	FAB30255001	M2x3	2EA

■ 1050 Wi-Fi Cover

※ Remove the following parts in order before replacing this part

a. Battery Pack(1010)

1. Remove the 1 screw.

2. Remove the Wi-Fi cover.

■ 1060 WLAN Module

> ※ **Remove the following parts in order before replacing this part**
>
> a. Battery Pack(1010), b. Wi-Fi Cover(1050)

1. Remove the 2 antenna cable and 1 screw.

No.	FRU No.	Specification	Qty
1	FAB30255101	M2.5x3	1EA

2. **Remove the** WLAN module.

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■ 1070 SD

※ Remove the following parts in order before replacing this part

a. Battery Pack(1010)

1. After pressing according to the arrow, remove the SD Card.
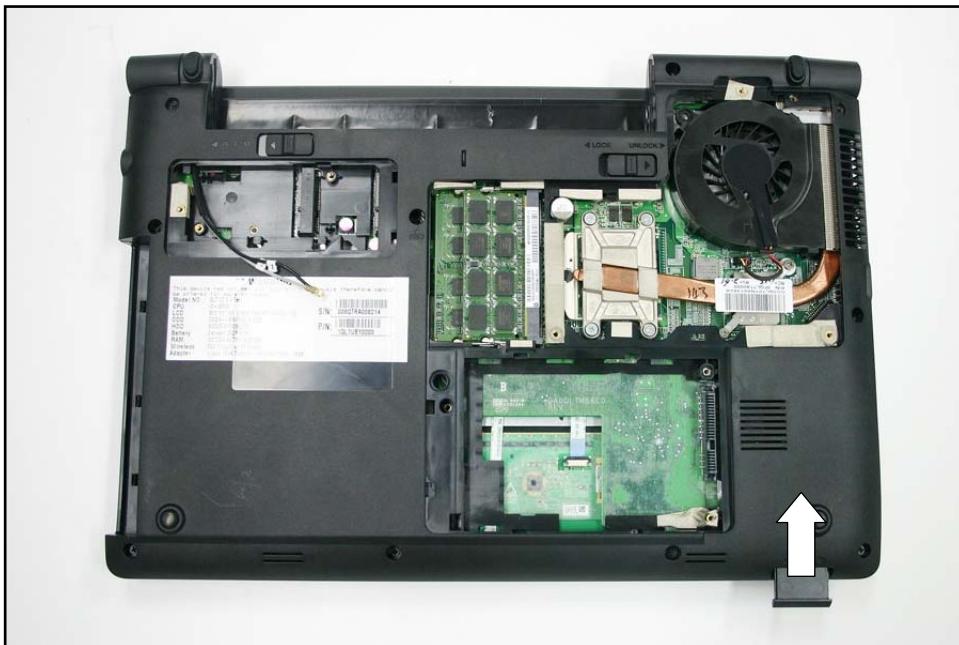
■ 1080 Keyboard

※ Remove the following parts in order before replacing this part

a. Battery Pack(1010)

1. Remove the 1 screw.

No.	FRU No.	Specification	Qty
1	FAB30248901	M2.5x6.5	1EA

2. Remove from the KBD KBD hook.
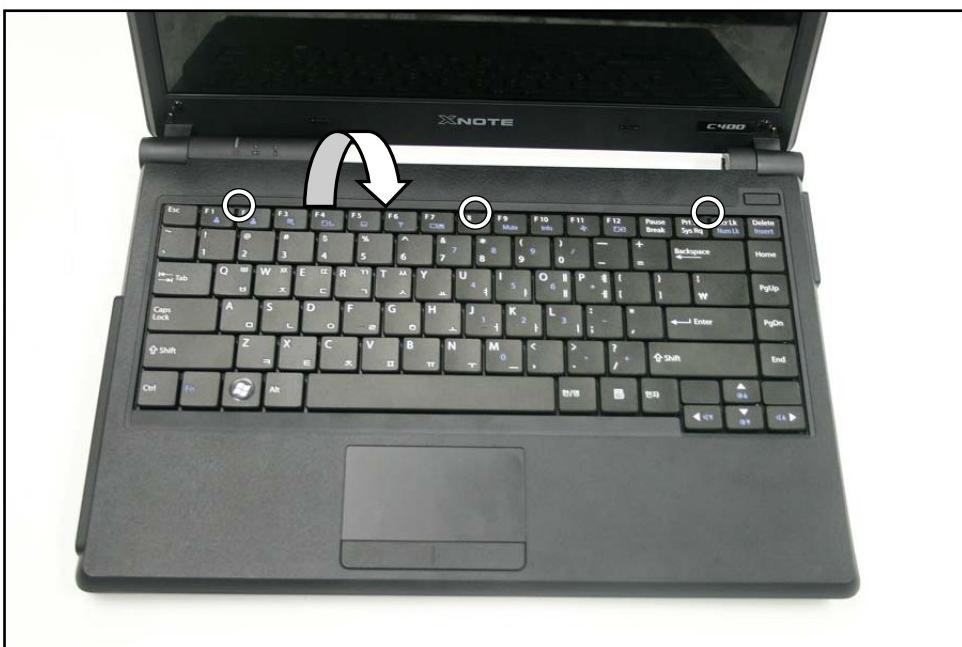
3. Remove the keyboard cable.
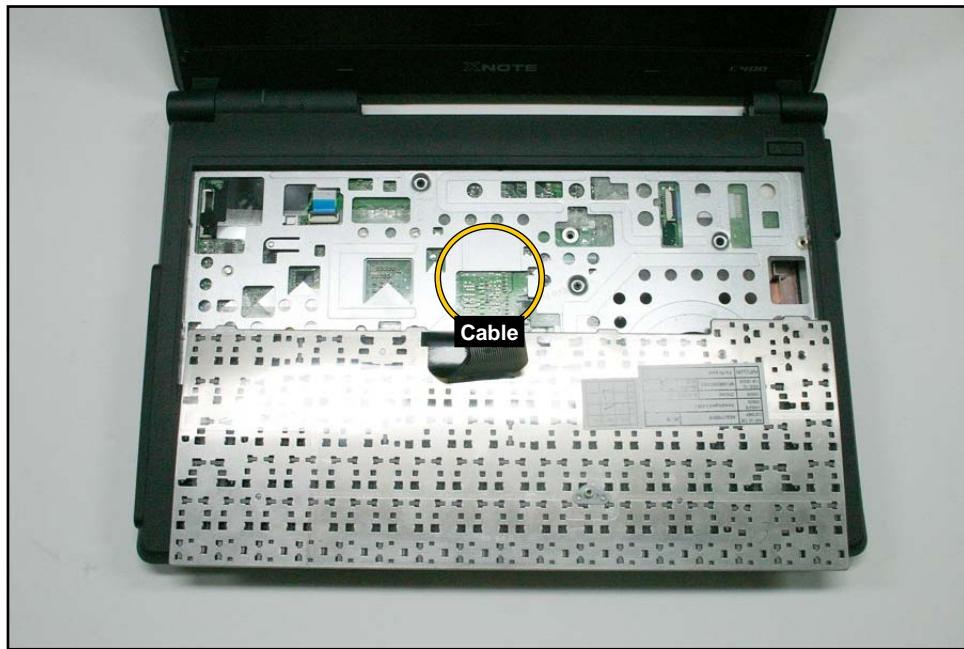
4. Remove the keyboard.

■ 1090 Keydeck

※ Remove the following parts in order before replacing this part

a. Battery Pack(1010), b. Keyboard (1080)

1. Remove the 9 screw.
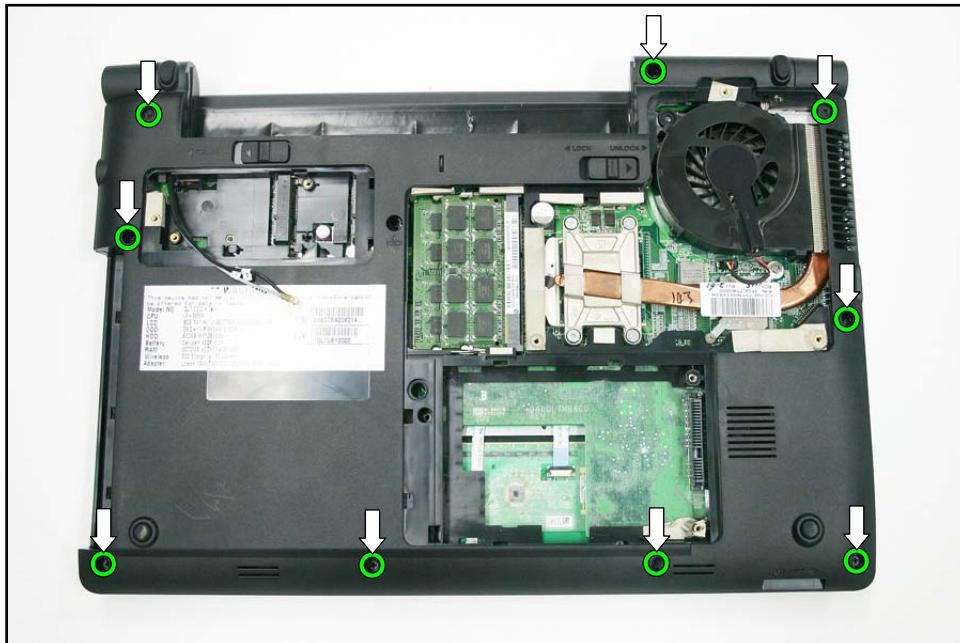
No.	FRU No.	Specification	Qty
1	FAB30248901	M2.5x6.5	9EA

2. Remove the 3 cable and 3 screw.
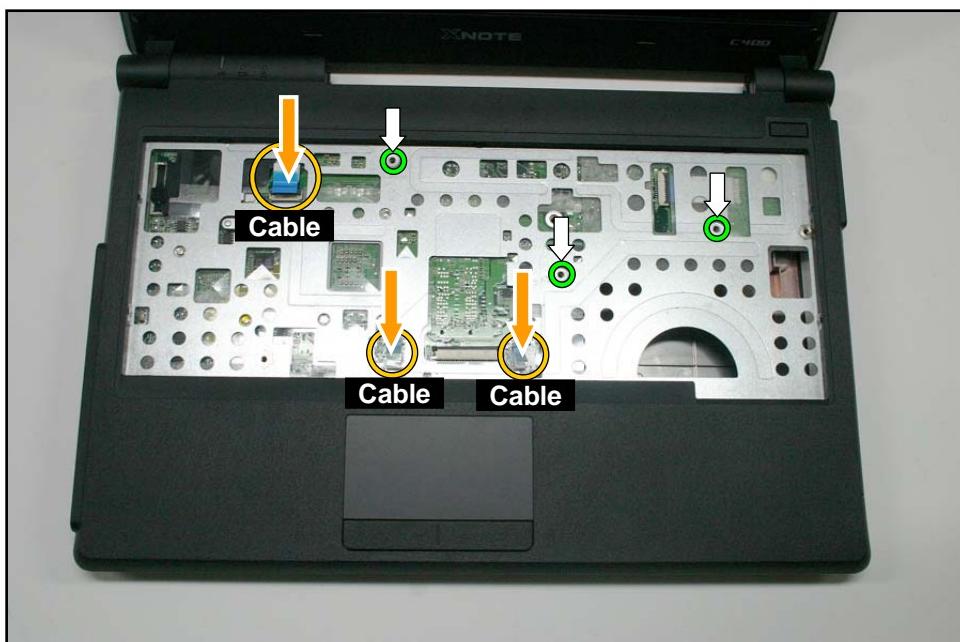
No.	FRU No.	Specification	Qty
1	MS25050I048	M2.5x5	3EA

3. It uses JIG and it removes the keyboard deck.


4. Remove the keyboard deck.
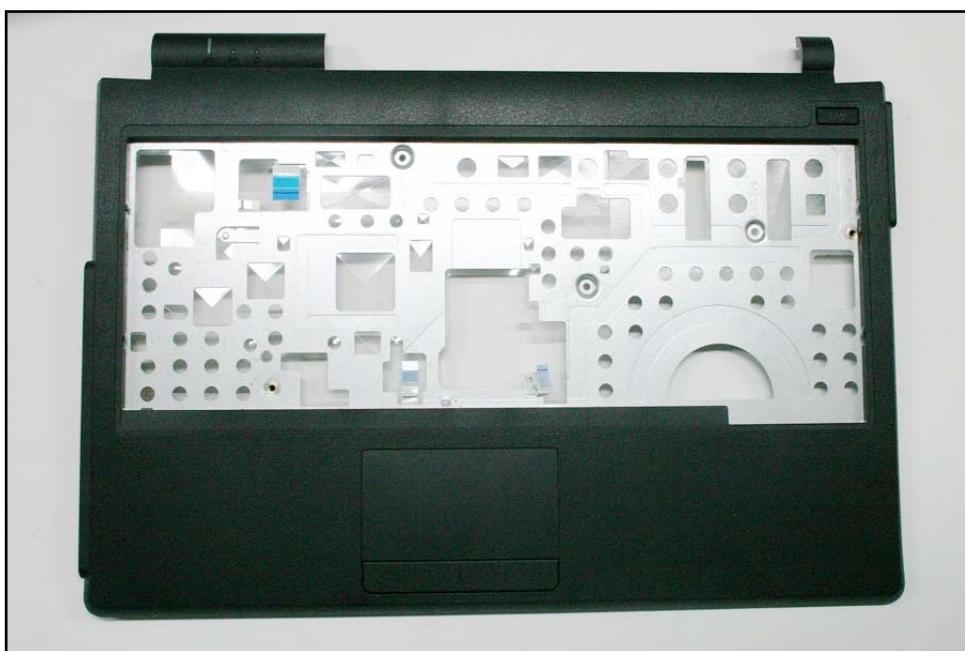
■ 1100 Touch Pad

※ **Remove the following parts in order before replacing this part**

a. Battery Pack(1010), b. Keyboard(1080), c. Keydeck(1090)

1. Remove the 2 screw and cable.
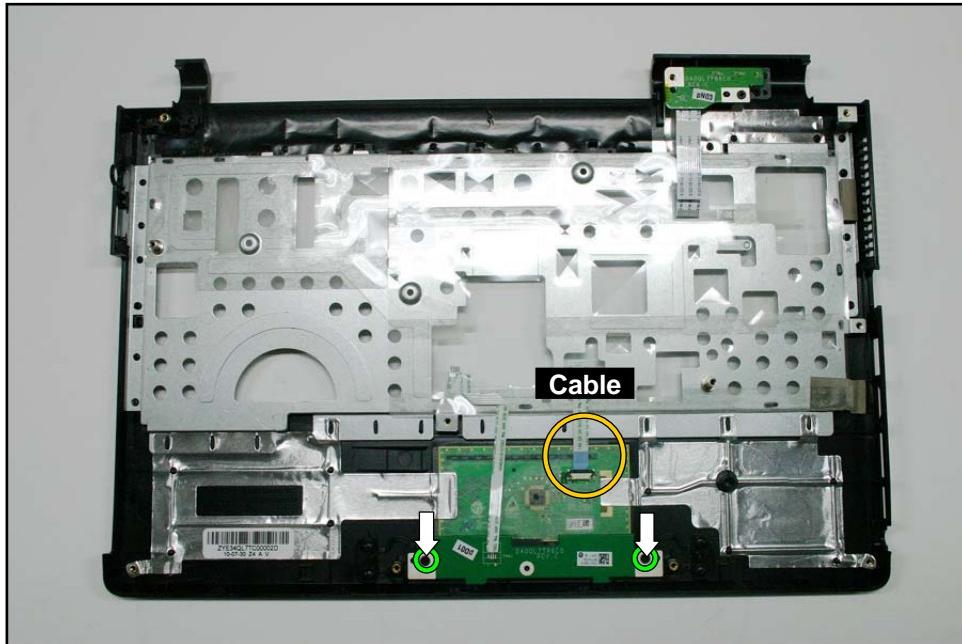
No.	FRU No.	Specification	Qty
1	FAB30255101	M2.5x3	2EA

2. Remove the touch pad.

3. Remove the touch pad cable.

■ 1110 Power Bottom
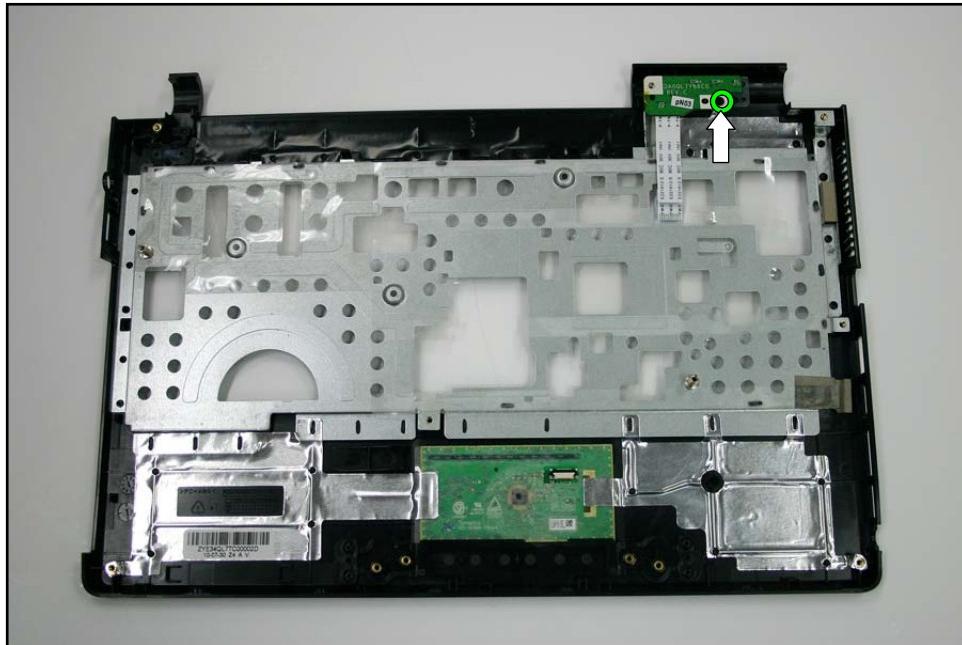
1. Remove the 1 screw.

No.	FRU No.	Specification	Qty
1	FAB30255101	M2.5x3	1EA

2. Remove the power bottom.
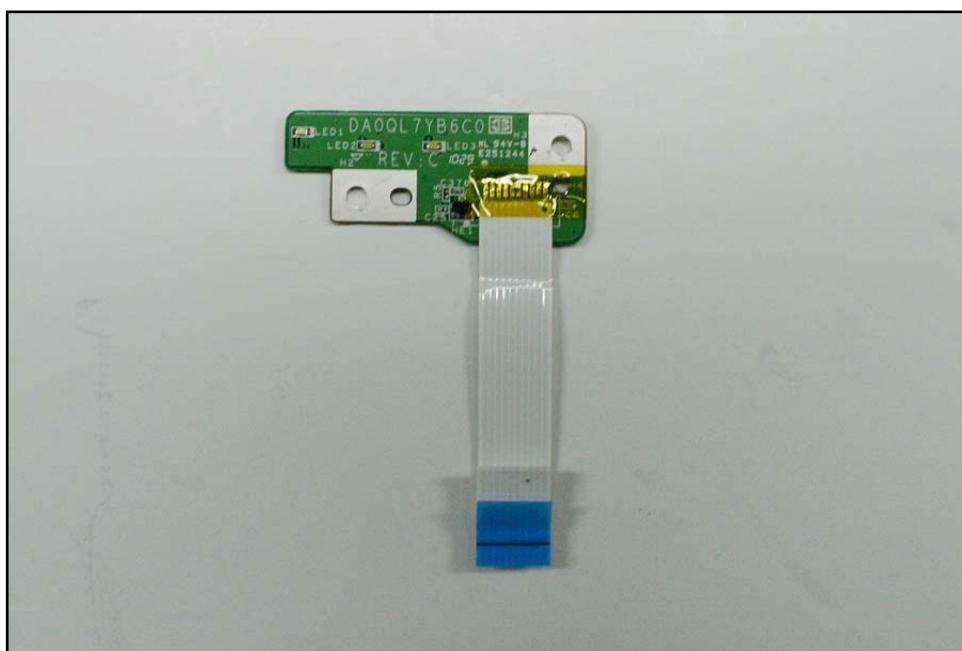
■ 1120 Sub Board

※ **Remove the following parts in order before replacing this part**

a. Battery Pack(1010), b. Keyboard(1080), c. Keydeck(1090)
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1. Remove the 1 cable and 1 screw.
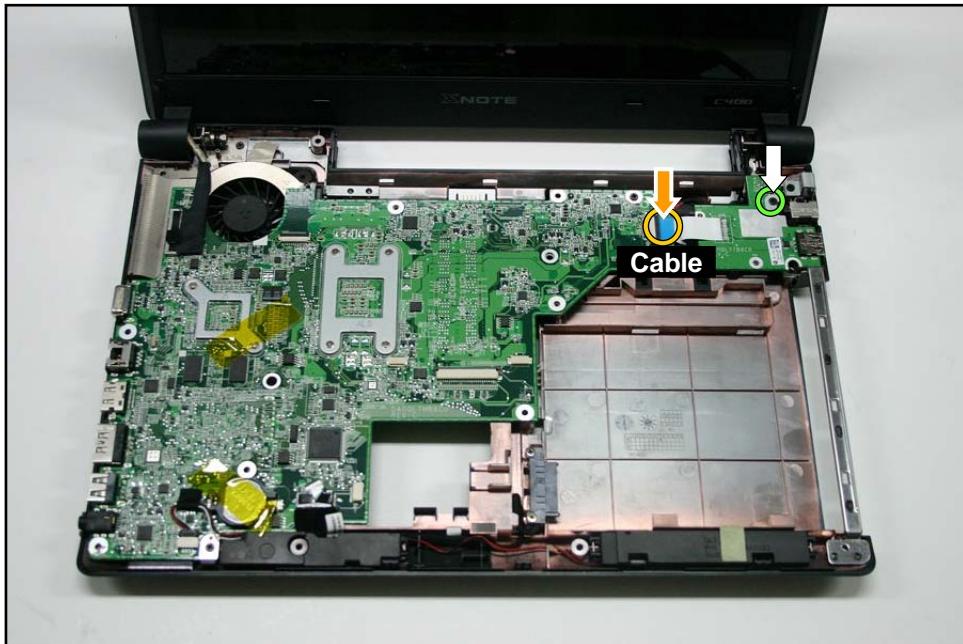
| No.	FRU No.	Specification	Qty
1	FAB30484001	M2.5x5	1EA

2. Remove the sub board.

■ 1130 Mainboard

※ **Remove the following parts in order before replacing this part**

a. Battery Pack(1010), b. Keyboard(1080), c.Keydeck(1090)

1. Remove the 5 connector/cable and 2 screw.
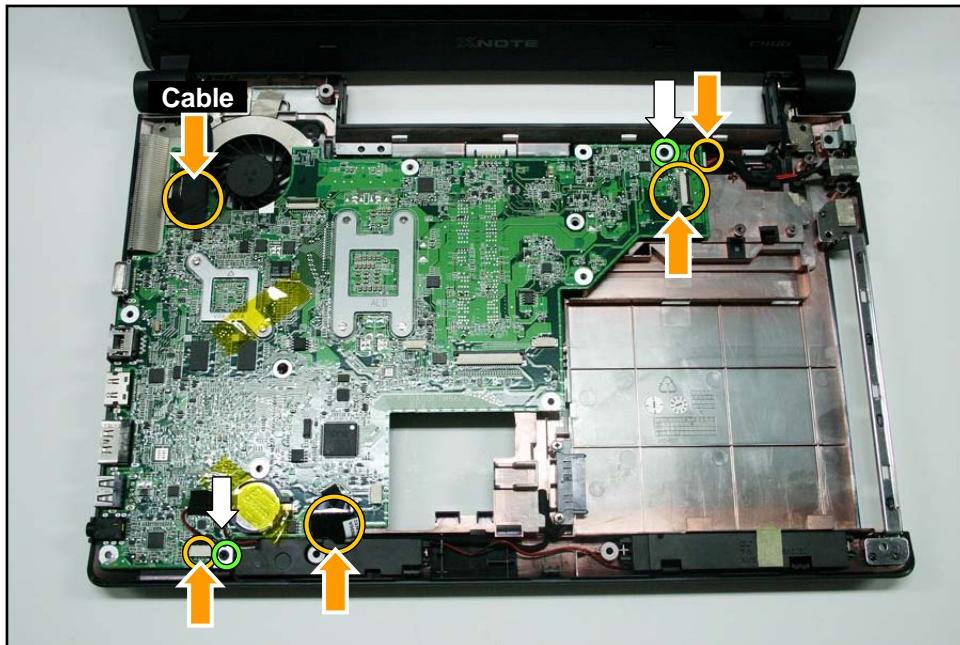
No.	FRU No.	Specification	Qty
1	FAB30484001	M2.5x5	2EA

2. Mainboard from the Bottom case and remove it.
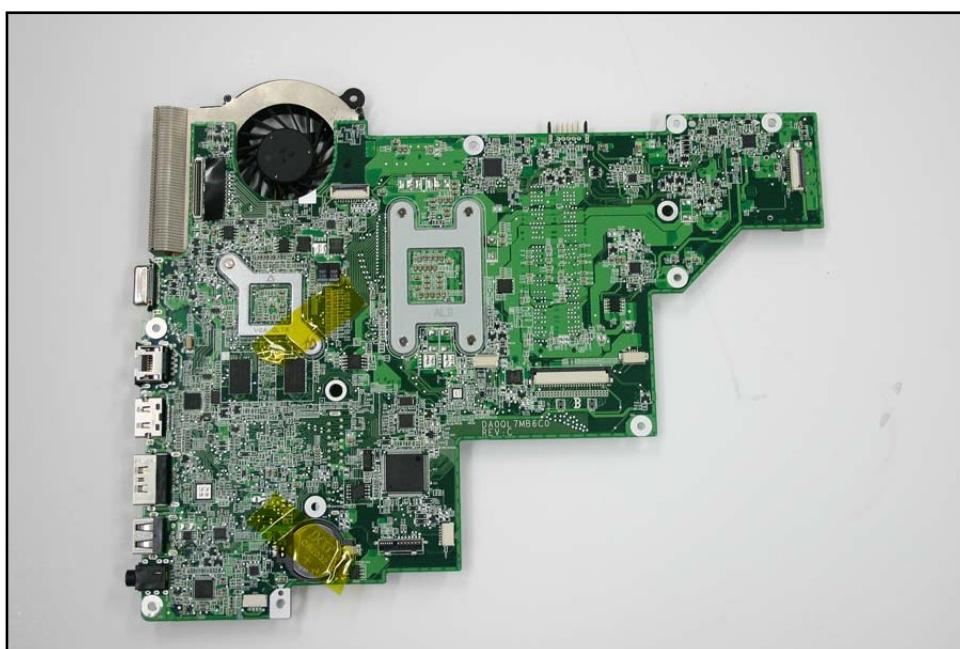
3. Remove the Mainboard Case.

■ 1140 ODD Cable

※ **Remove the following parts in order before replacing this part**

a. Battery Pack(1010), b. Keyboard(1080), c.Keydeck(1090)

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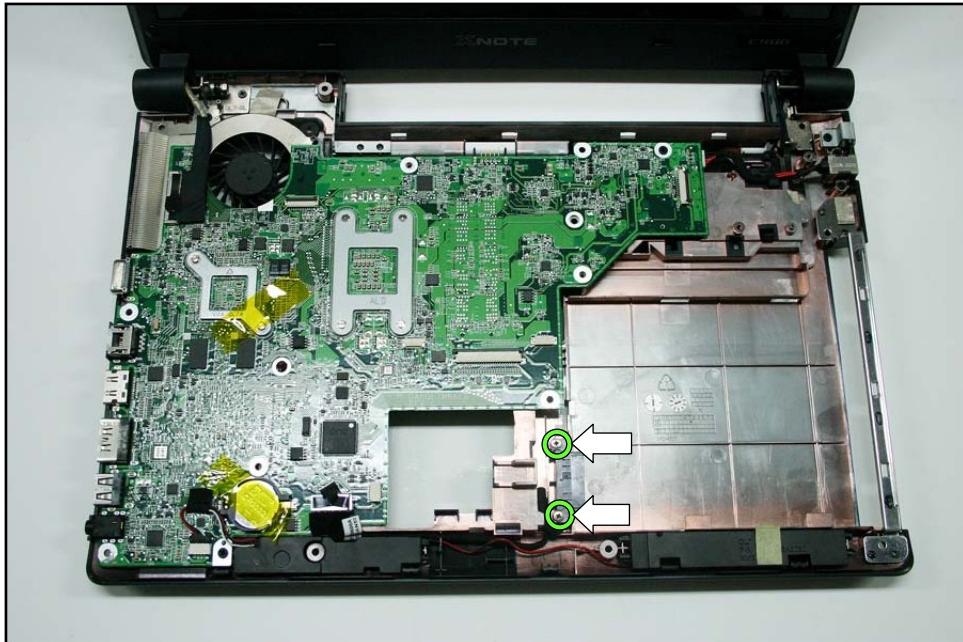
1. Remove the 2 screw.

No.	FRU No.	Specification	Qty
1	FAB31140401	M2x6	2EA

2. Remove the ODD Cable.

■ 1150 CPU/GPU Fan Assembly

※ **Remove the following parts in order before replacing this part**

a. Battery Pack(1010), b. Memory Cover(1030)

1. Remove the 1 antenna cable and 6 screw.
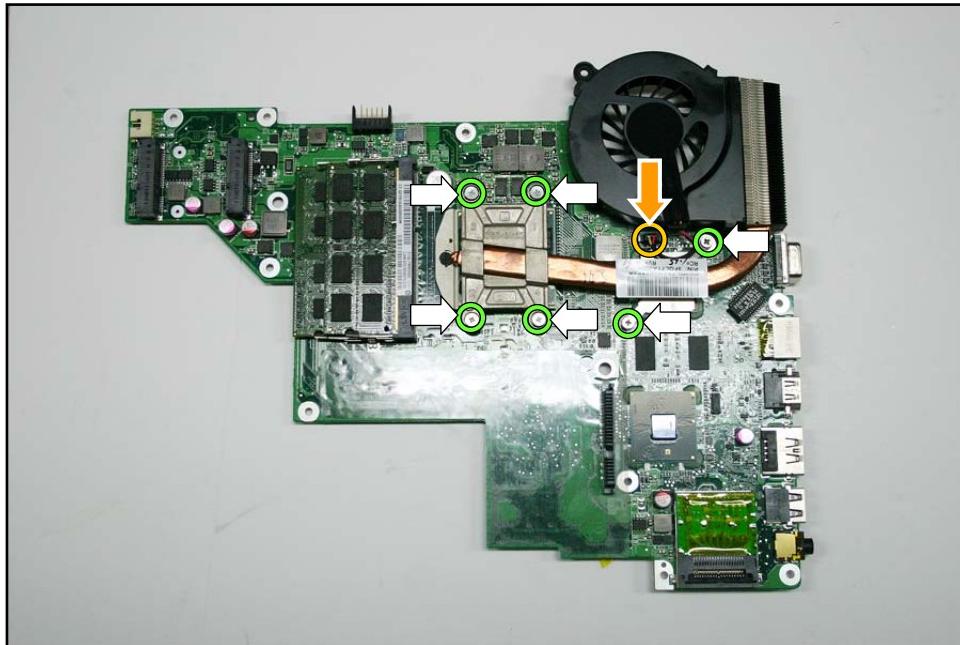
2. Remove the CPU/GPU Fan Assembly.
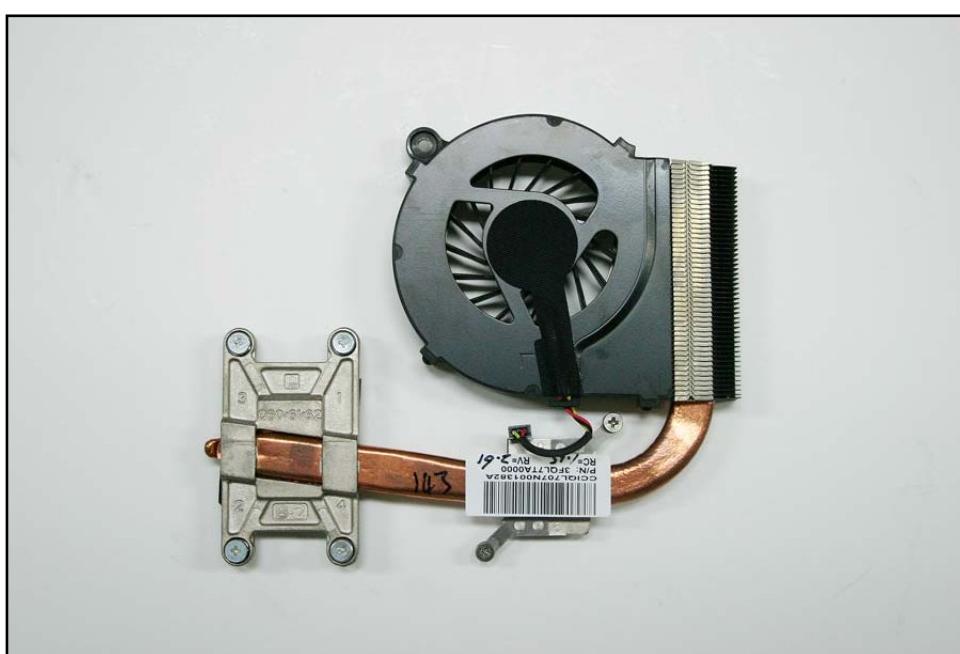
■ 1160 CPU

※ Remove the following parts in order before replacing this part

 a. Battery Pack(1010), b. Memory Cover(1030), c. CPU/GPU Fan Assembly(1150)

1. It uses screwdriver and it removes the CPU.
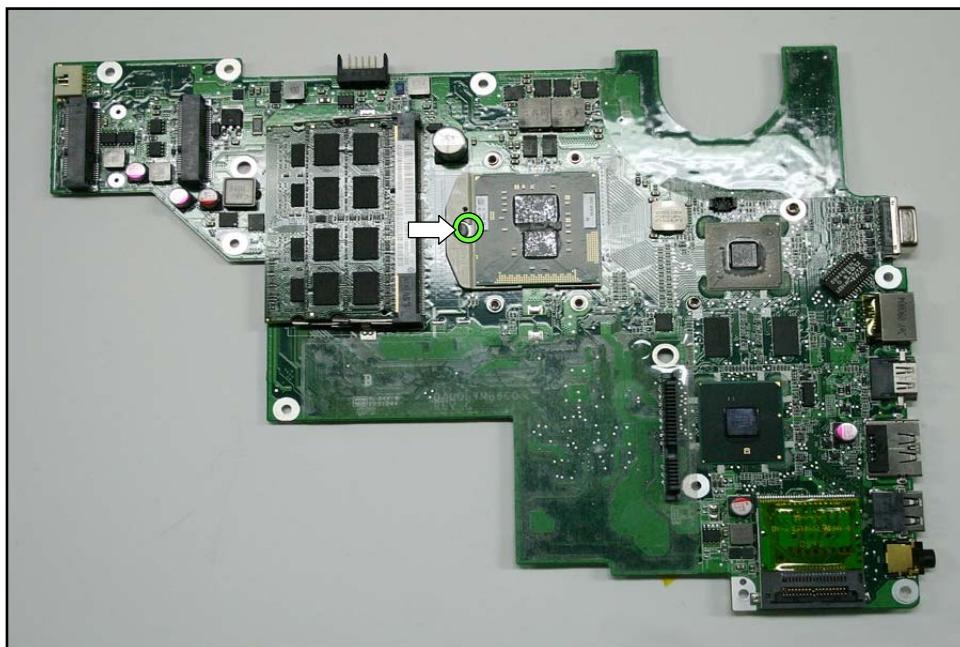
■ 1170 Memory

※ **Remove the following parts in order before replacing this part**

a. Battery Pack(1010), b. Memory Cover(1030)

1. Remove the Hook.
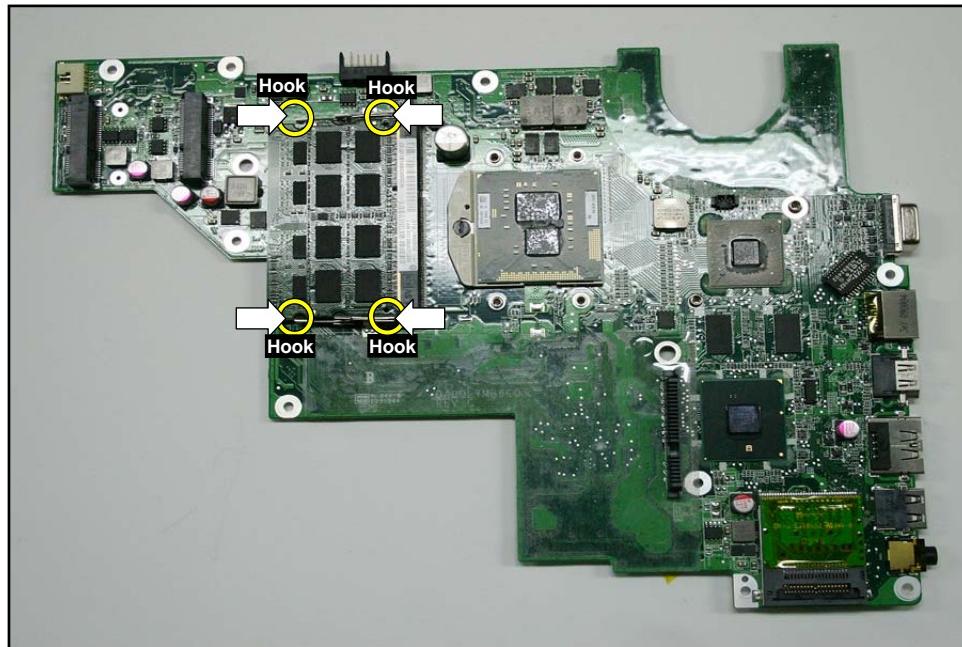
2. Remove the Memory.

■ 1180 AC Connector

※ Remove the following parts in order before replacing this part
a. Battery Pack(1010), Keyboard(1080), c. Keydeck(1090)

1. Remove the 2 screw.

No.	FRU No.	Specification	Qty
1	FAB30484001	M2.5x5	2EA

2. Remove the AC Connector.

■ 1190 Speaker

※ Remove the following parts in order before replacing this part

a. Battery Pack(1010), b Keyboard(1080), c. Keydeck(1090), d. Mainboard(1130)

1. Remove the **Speaker**.
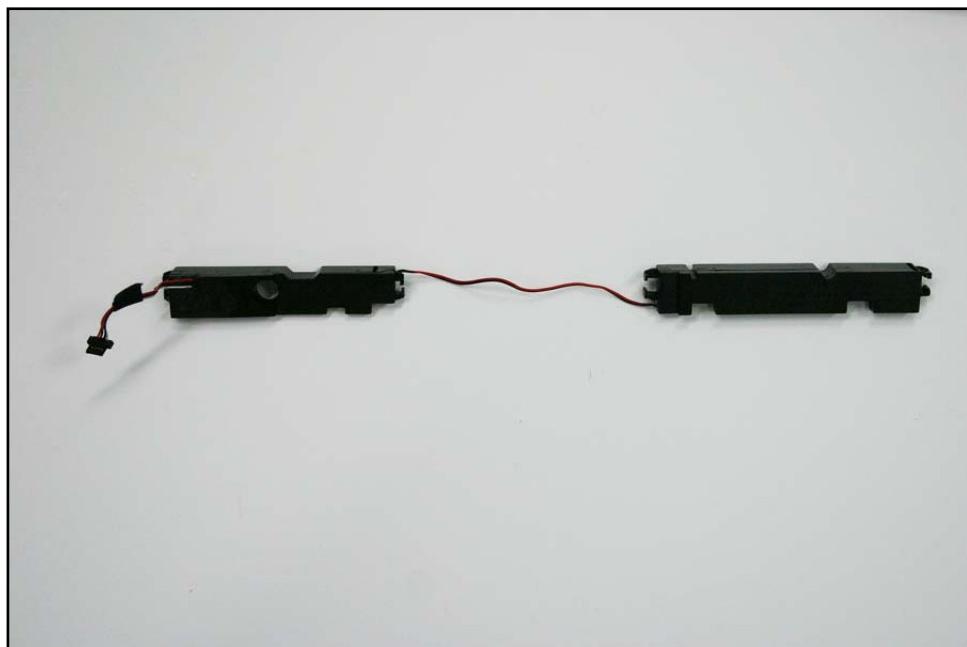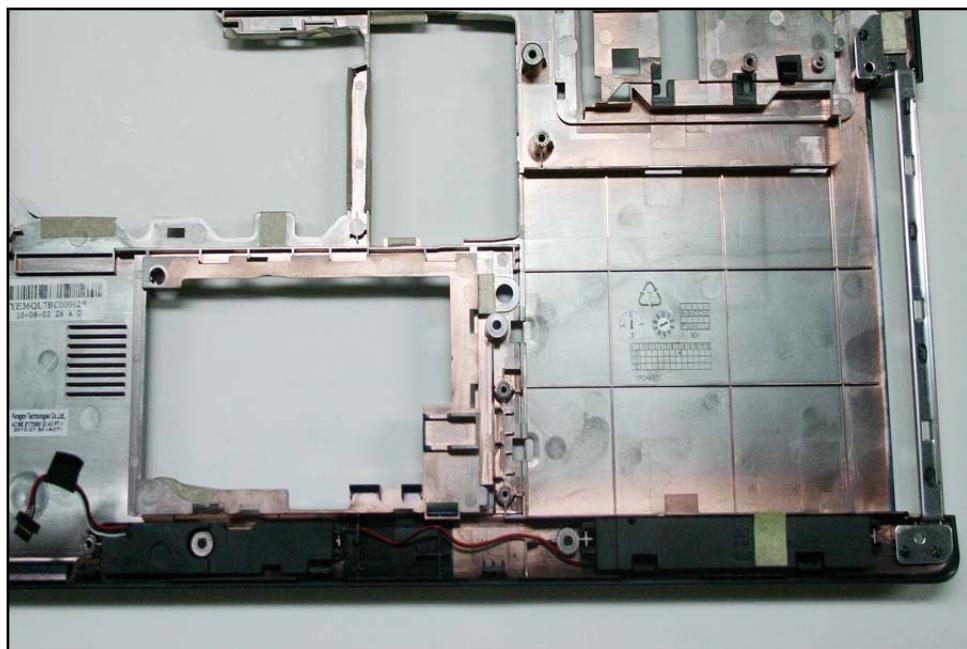
■ 1200 Display Module

※ Remove the following parts in order before replacing this part

a. Battery Pack(1010), b. Keyboard(1080), c. Keydeck(1090), d. Sub Board(1120), e. Mainboard(1130)

---

1. Remove the 4 Screw.

No.	FRU No.	Specification	Qty
1	FAB30484001	M2.5x5	4EA

2. Remove the Display Module.

■ 1210 Hinge Cap

※ **Remove the following parts in order before replacing this part**

a. Battery Pack(1010), b. Keyboard(1080), c. Keydeck(1090), d. Sub Board(1120), e. Mainboard(1130)

f. Display Module(1200)

1. Uses sharp Pinset separates the both sides sticker.

2. Remove the sticker.

3. Remove the 4 screw.
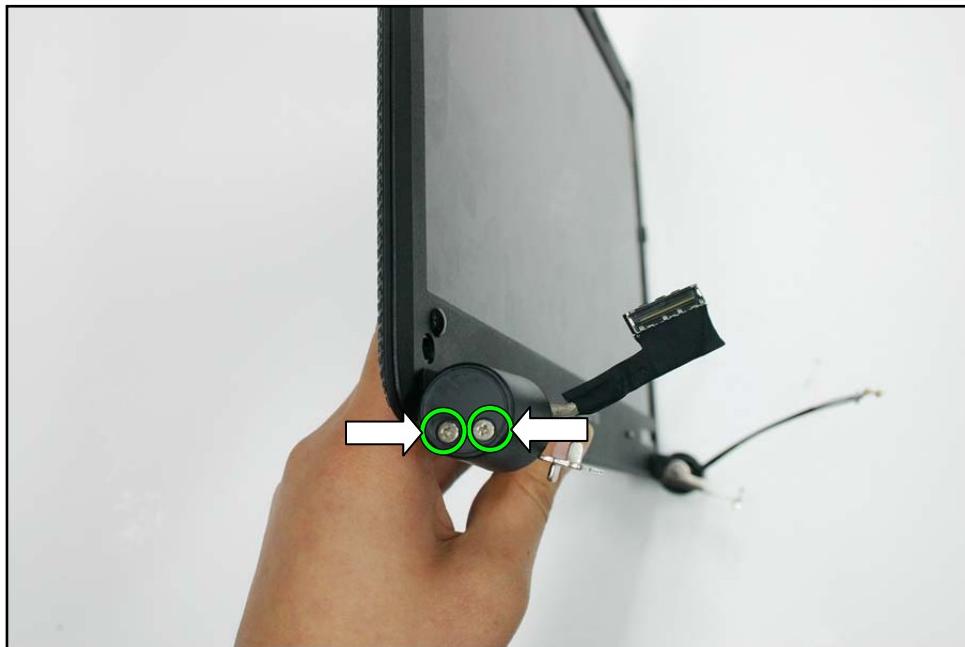
| No.	FRU No.	Specification	Qty
1	FAB30208501	M2x3	4EA

4. Remove the Hinge Cap.

■ 1220 LCD Front Case


※ Remove the following parts in order before replacing this part

a. Battery Pack(1010), b. Keyboard(1080), c. Keydeck(1090), d. Display Module(1200), e.HingeCap(1210)

---

1. Remove the 4 rubber and 4 screw .

No.	FRU No.	Specification	Qty
1	FAB30484001	M2.5x5	4EA
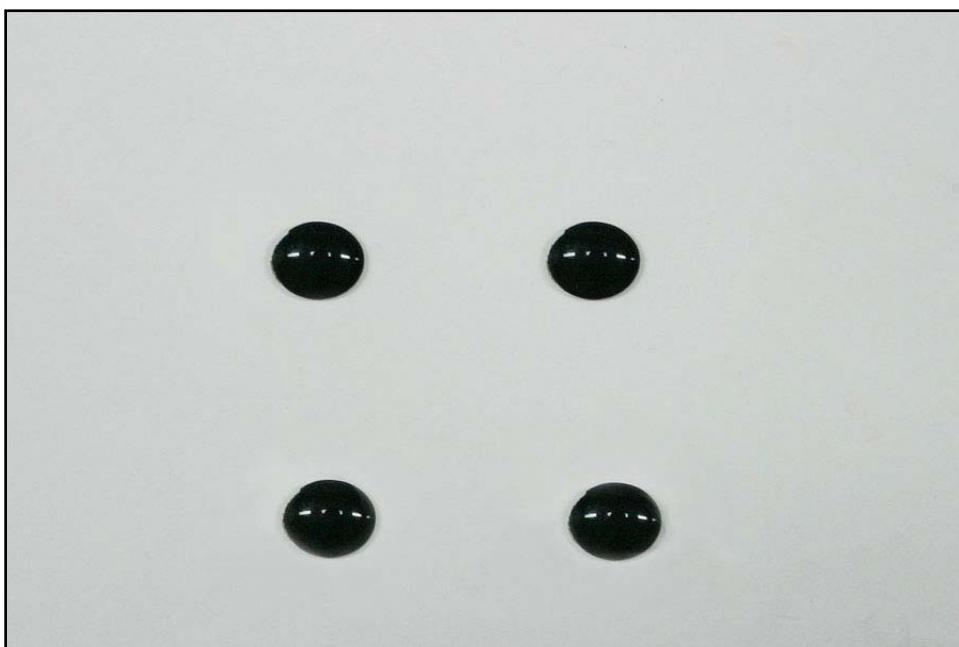
2. It uses JIG and it removes the LCD Front Case.

■ 1230 LCD Assembly

> ※ **Remove the following parts in order before replacing this part**
>
> a. Battery Pack(1010), b. Display Module(1200), c. HingeCap(1210), d. LCD Front Case(1220)

1. Remove the 4 screw.
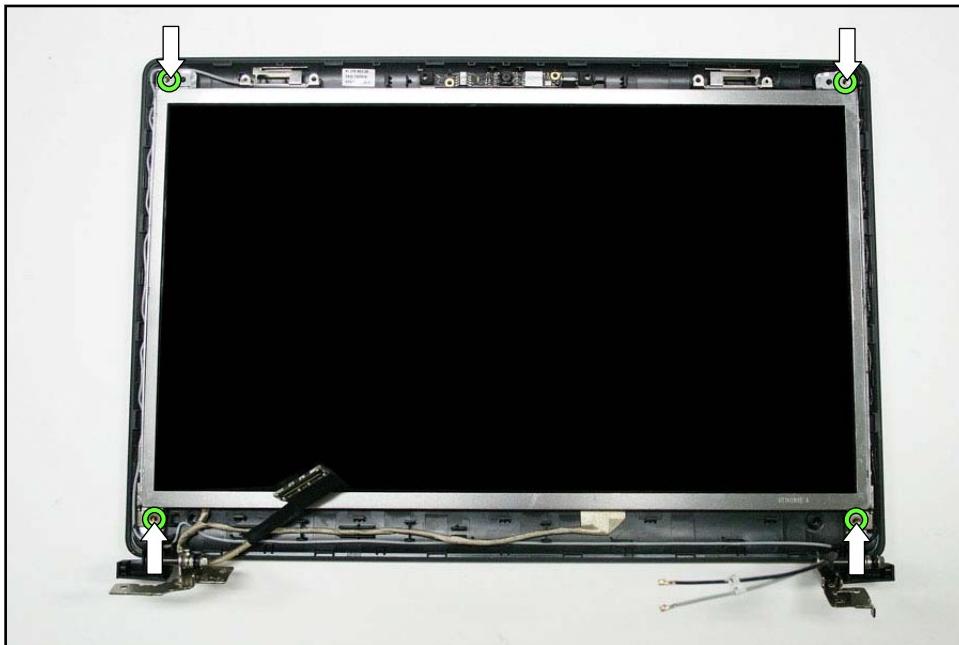
No.	FRU No.	Specification	Qty
1	MS25050I048	M2.5x5	4EA

2. Remove the LCD Assembly.
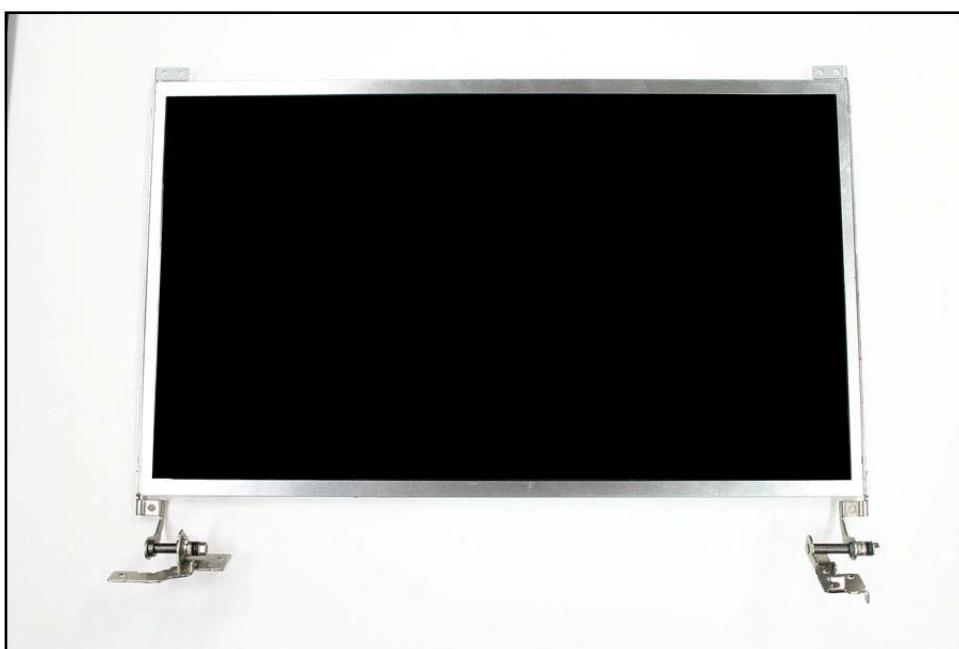
■ 1240 LCD Panel Bracket

※ Remove the following parts in order before replacing this part

a. Battery Pack(1010), b. Display Module(1200), c. HingeCap(1210), d. LCD Front Case(1220), e. LCD Assembly(1230)

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1. Remove the 4 screw.
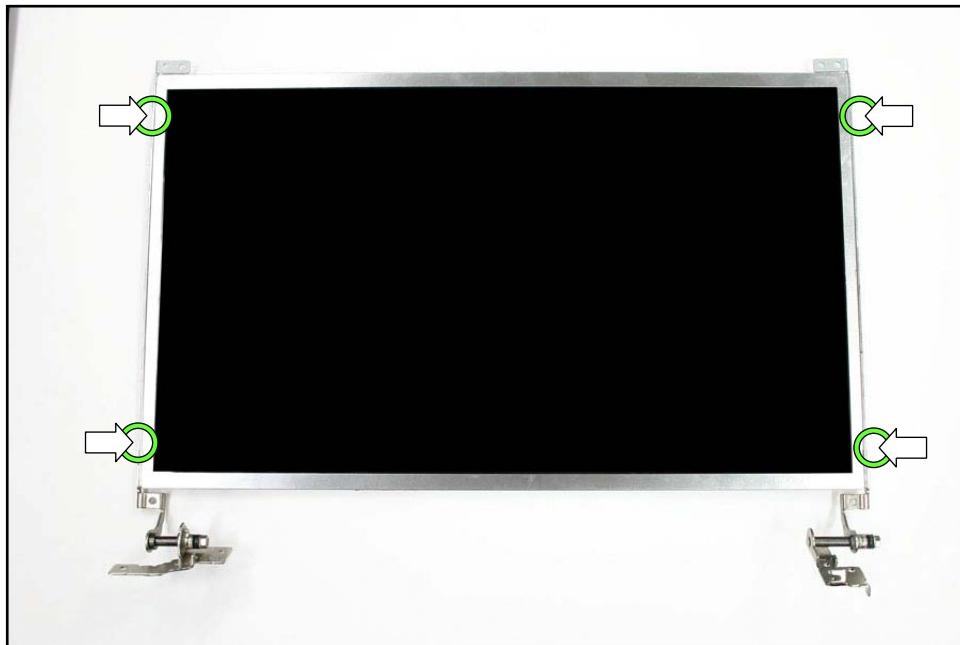
No.	FRU No.	Specification	Qty
1	FAB30208501	M2x3	4EA

2. Remove the LCD Panel Bracket.

■ 1250 LCD Cable

※ Remove the following parts in order before replacing this part

a. Battery Pack(1010), b. Display Module(1200), c. HingeCap(1210), d. LCD Front Case(1220), e. LCD Assembly(1230)

1. Remove the 1 cable.
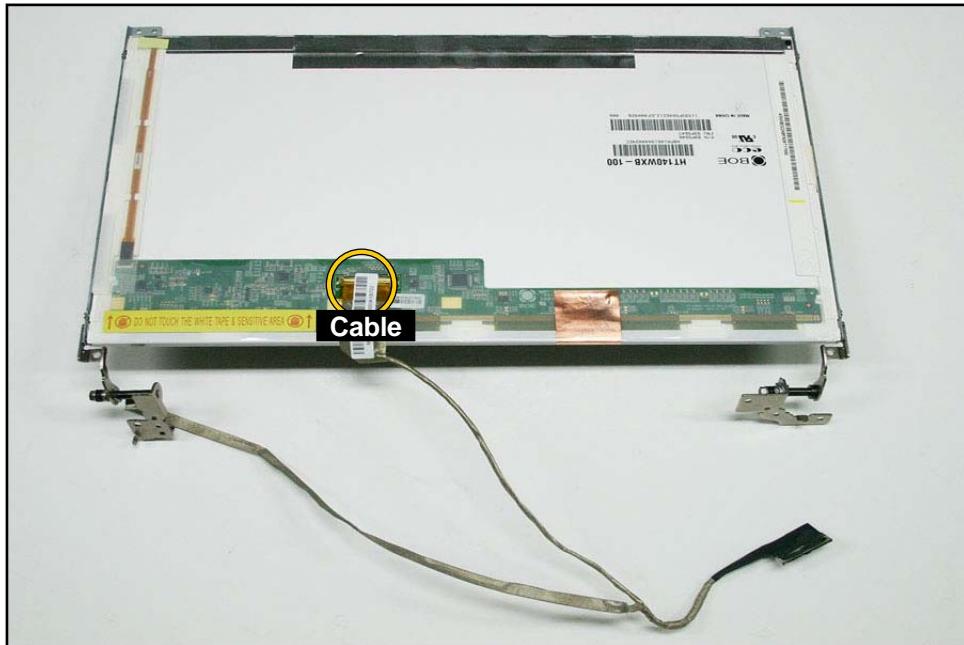
2. Remove the LCD Cable.
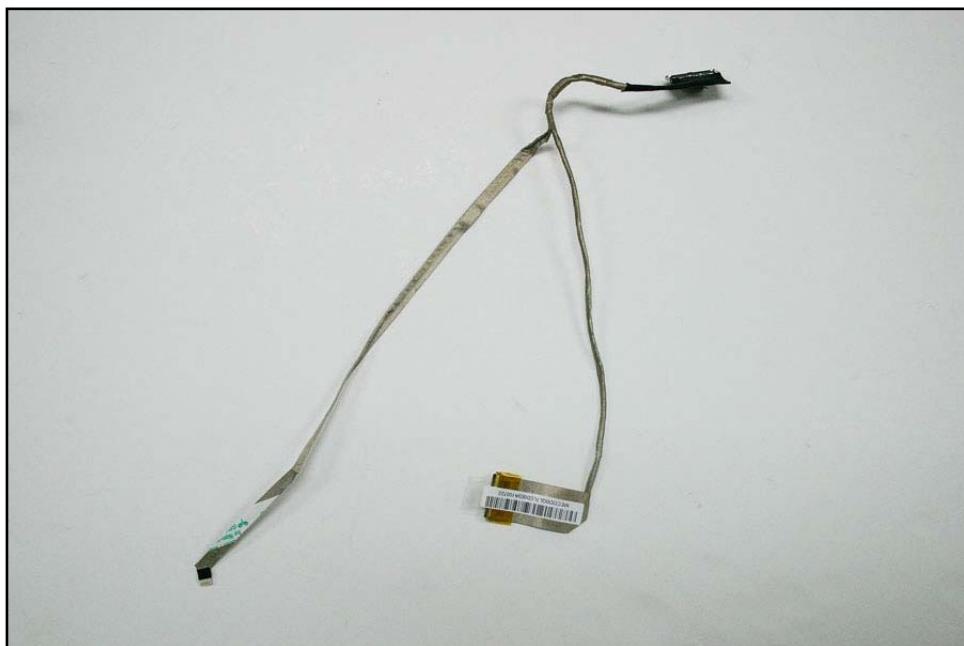
■ 1260 Web Cam Module

※ Remove the following parts in order before replacing this part

a. Battery Pack(1010), b. Display Module(1200), c. HingeCap(1210), d. LCD Front Case(1220), e. LCD Assembly(1230)

1. Remove the Web Cam Module.
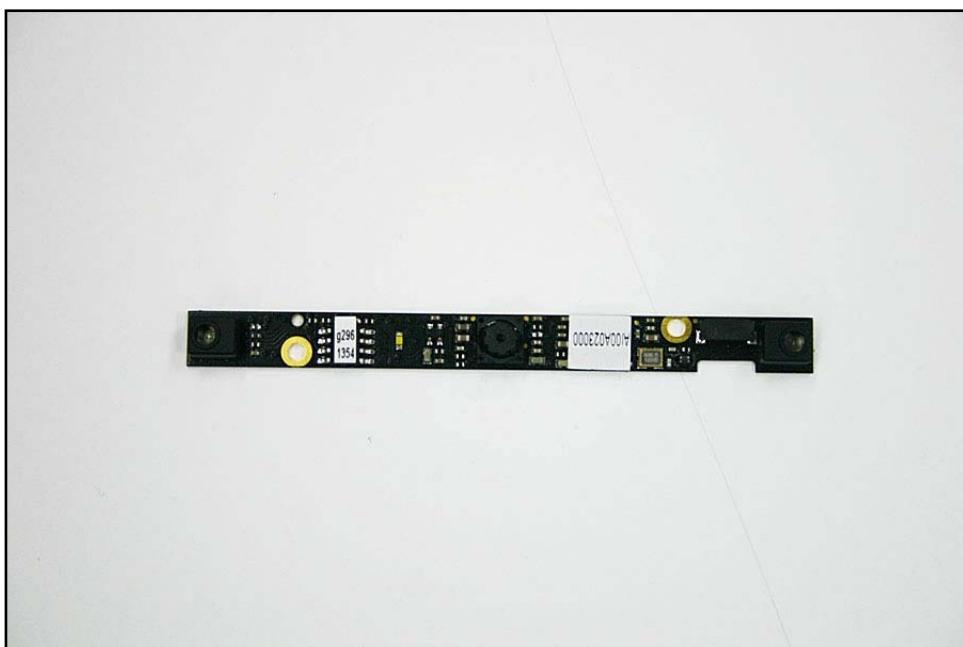
Chapter 6. Part lists

REV.06

| Category	Loc. No.	LG P/N	Description	Remark
Mainboard	NMLB01	EBR72762201	QL7 MB (HM55,UMA, PIM)WO CPU 35W	
	NMLB01	EBR72762211	QL7 MB (HM55,UMA, PDT)WO CPU 35W	
	NMLB01	EBR72762221	QL7 MB (N11M-GE2,SAM 512,DIS)WO CPU 35W	
	NMLB01	EBR72762231	QL7 MB (N11M-GE2,HYN 512,DIS)WO CPU 35W	
SUB B/D	NSUB01	EBR72762301	Power SUB-BD (with cable) USB Board (include power button)	
	NSUB02	EBR72762311	LED BD (with cable)	
Cover	NCVR01	ACQ85327101	CPU,Memory DOOR assy	
	NCVR02	ACQ85327201	HDD DOOR assy	
	NCVR03	ACQ85300501	WI-FI DOOR assy	
ODD	NODD01	EAZ60881801	ODD Super Multi GT32N	
	NODD02	ACQ85301201	ODD BEZEL ASSY(Super Multi)	
	NODD03	MAZ63031801	ODD Bracket	
	NODD04	EAD61651101	ODD connection cable AX1 ODD(13P/13P,R3A)30V,FOX	
	NODD04	EAD61651102	ODD connection cable AX1 ODD(13P/13P,R2A)30V,ANR	
HDD	NHDD01	EAZ60666002	250GB HGST	
	NHDD01	EAZ60841902	250GB TSDK	
	NHDD01	EAZ60666003	3200GB HGST	
	NHDD01	EAZ60841903	320GB TSDK	
	NHDD01	EAZ60666004	500GB HGST	
	NHDD01	EAZ60841904	500GB TSDK	
	NHDD01	EAZ60841905	640GB TSDK	
	NHDD02	MAZ63031901	HDD Bracket ASSY	
	NHDD03	EAG62811401	HDD Connector	
Keyboard	NKBD01	AEW73049802	KB(USA)QL7(AEQL7U00,R3A)CNY	10/8 LG P/N change, same as C500
	NKBD01	AEW73049801	KB(KOR)QL7(AEQL7Y00,R3A)CNY	
	NKBD01	AEW73049808	KB(ARAB)QL7(AEQL7Q00,R3A)CNY	
	NKBD01	AEW73049807	KB(BRZL)QL7(AEQL7600,R3A)CNY	
	NKBD01	AEW73049806	KB(TUR)QL7(AEQL7A00,R3A)CNY	
	NKBD01	AEW73049805	KB(FRA)QL7(AEQL7F00,R3A)CNY	
	NKBD01	AEW73049804	KB(SPAN)QL7(AEQL7P00,R3A)CNY	
	NKBD01	AEW73049803	KB(HEBREW)QL7(AEQL7V00,R3A)CNY	
MiniCard	NMINI01	EBM60841501	Azurewave AW-NB041H (BGN 1X1)	
	NMINI01	EBM60901401	ASKEY WLL6100B-D95 (BGN 1X1)	
	NMINI01	EBM60681601	Intel Centrino Advanced-N 6200(AGN, 2x2) HMWG Minicard	

Category	Loc. No.	LG P/N	Description	Remark
MiniCard	NMINI02	EAT61054101	BLUETOOTH2.1+EDR USB MODULE(QBT410UB-04)	
	NMINI03	EAD61651304	Bluetooth Cable QL7 BT(6/6,3A)300V NEI	
	NMINI03	EAD61651301	Bluetooth Cable LX9 BT(6/6,1A)300V FOX	
Memory	NMRY01	EAN51348905	Hynix DDR3-1066 2G	
	NMRY01	EAN51348605	Hynix DDR3-1066 1G	
	NMRY01	EAN61148302	A-Data DDR3-1066 2G	
	NMRY01	EAN61148202	A-Data DDR3-1066 1G	
	NMRY01	EAN61607001	Hynix DDR3-1333MHz 4GB	3/17 add (11')
Battery	NBATT01	EAC60898301	BATT LI,916T2035F,3S2P,5.2A Simplo-SDI(Black)	
	NBATT01	EAC60938401	BATT LI,911600005,3S2P,5.2A Celxpert-LGC (Black)	
	NBATT01	EAC61098403	BATT LI,916T2099F,3S2P,4.4A Simplo-SDI(Black)	
Webcam	NWEBC01	EBP61281901	Camera 0.3M W/stereo Mic for Chicony	
Dummy Socket	NDSO01	MCK66558801	SD Card Dummy	
Thermal Module	NFAN01	MED62211901	QL7 THERMAL MODULE ASSY 35W GM (CCI)	
	NFAN01	MED62211902	QL7 THERMAL MODULE ASSY 35W GM (FCN)	
	NFAN01	MED62211903	QL7 THERMAL MODULE ASSY 35W GM (TWE)	
	NFAN01	MED62212001	QL7 THERMAL MODULE ASSY 35W PM (CCI)	
	NFAN01	MED62212002	QL7 THERMAL MODULE ASSY 35W PM (FCN)	
	NFAN01	MED62212003	QL7 THERMAL MODULE ASSY 35W PM(TWE)	
Keyboard Deck	NKDECK01	ABQ73501901	kdeck assy - black	
	NKDECK02	EBR72762321	Touchpad button B/D (with Finger B/D cable)	
	NKDECK03	EAD61651401	Touchpad Cable QL7 TP(69*6.5,12P,1A)60V HMB	
	NKDECK03	EAD61651402	Touchpad Cable QL7 TP(68*6.5,12P,1A)30V PTI	
Bottom	NBOTM01	ABQ73502001	Bottom Case assy -black	
	NBOTM02	MJH62334601	DC-Jack Cable	A510 common use
	NBOTM03	MDP62246801	Bottom Rubber (2ea) - big	
	NBOTM04	MDP62246701	Bottom Rubber (2ea) - small	
LCD	NLCD01	ABQ73502101	rear case assy - black	
	NLCD01	ABQ73502102	rear case assy - blue	
	NLCD01	ABQ73502103	rear case assy - Red	
	NLCD01	ABQ73602602	rear case assy - black UV	12/28 add (10')
	NLCD02	ABQ73482901	front case (LG_w/ webcam)	
	NLCD02	ABQ73482902	front case (Xnote_w/ webcam)	
	NLCD03	EAJ60682802	LCD 14'' HD LGD (1366X768) LP140WH1-TLC6	

Category	Loc. No.	LG P/N	Description	Remark
LCD	NLCD03	EAJ61788601	LCD 14" HD LGD (1366X768) LP140WH4-TLA1	
	NLCD03	EAJ60890202	LCD 14" HD BOE (1366X768)	
	NLCD04	EAD61650801	QL7 LCD(40/40/6P,1A)200V MEC - LCD Cable & Webcam cable	
	NLCD04	EAD61650802	QL7 LCD(40/40/6P,1A)200V HLN - LCD Cable & Webcam cable	
	NLCD04	EAD61650803	QL7 LCD(40/40/6P,2A)200V FOX - LCD Cable & Webcam cable	
	NLCD05	AEH73596501	LCD Bracket&Hinge_Left-SZS_QL7(FBQL7010,REV3A)	
	NLCD05	AEH73596502	LCD Bracket&Hinge_Left-JAR_QL7(FBQL7012,REV3A)	
	NLCD05	AEH73596503	LCD Bracket&Hinge_Left-AJP_QL7(FBQL7014,REV3A)	
	NLCD06	AEH73596601	LCD Bracket&Hinge_Right-SZS_QL7(FBQL7011,REV3A)	
	NLCD06	AEH73596602	LCD Bracket&Hinge_Right-JAR_QL7(FBQL7013,REV3A)	
	NLCD06	AEH73596603	LCD Bracket&Hinge_Right-AJP_QL7(FBQL7015,REV3A)	
	NLCD07	MCQ66470801	Front Rubber	
	NLCD08	MCK66539701	LCD Hinge Cap_Left (C400 black)	
	NLCD09	MCK66539702	LCD Hinge Cap_Right (C400 black)	
	NLCD10	MCR64351301	LCD Hinge Cap hole Sticker (C400 black)	
	NLCD11	MEZ63392101	name Label C400	
	NLCD11	MEZ63392103	name Label CD400	
CPU	NCPU01	EAN60916607	i3-370 2.40GHz	
	NCPU01	EAN60916610	i3-380 2.53GHz	
	NCPU01	EAN60916611	i5-460 2.53GHz	
	NCPU01	EAN60916612	i5-560 2.66GHz	
	NCPU01	EAN60916613	i5-580 2.66GHz	3/17 add (11')
	NCPU01	EAN60916614	P6100 2.0GHz	
	NCPU01	EAN60916615	P6200 2.13GHz	
	NCPU01	EAN60916619	i5-480M (2.66 GHz)	1/6 add (11')
	NCPU01	EAN60916620	i3-390M (2.66 GHz)	1/6 add (11')
Power code	NPWCD01	EAD55718606	PWR CORD VA02S31161218505 US-110V,3P (90W 3PIN)	
	NPWCD01	EAD55718601	POWER CORD KOR 3P 1.8M(FM0I0008-018) (90W 3PIN)	
	NPWCD01	EAD55718603	POWER CORD(EU) 1.8M 3PBLACK FM010008-010 (90W 3PIN)	
	NPWCD01	EAD55718604	PWR CORD V3N5B30161218006 UK (90W 3PIN)	
	NPWCD01	EAD55718607	PWCRD(ISR)1.83M 3P 250V S606B30161218307 (90W 3PIN)	
	NPWCD01	EAD50479201	PWR CORD US 2P 1.8M 125V FA0V0005-038 (65W 2PIN)	
	NPWCD01	EAD50476201	POWERCORD1.83M(UK,2P,BLK)FWO-I0008-006EP (65W 2PIN)	
	NPWCD01	EAD30750802	PWR CORD(ISR1.83,2P250V)S637B201312183DF (65W 2PIN)	
	NPWCD01	EAD50481701	POWERCORD1.83M(EU,2P,BLK)FW0-I0008-005EP (65W 2PIN)	
	NPWCD01	EAD50485502	PWR CORD LS-7H 1.8M South Africa (65W 2PIN)	
	NPWCD01	EAD55718614	PWR CORD LS-15 1.83M South Africa (90W 3PIN)	
	NPWCD01	EAD55718611	Plug, LP-26A Connector, LS-15 1.8M NONE 250V 10A H03VV-F 0.75mm^2 x 3C BLACK. INMETRO(Brazil) NBR 14136 N	Brazil

Category	Loc. No.	LG P/N	Description	Remark
Adapter	NADT01	EAY61689501	ADP 19V 4.74A 90W(100-240V)SLS0455A19QK (3Pin)	
	NADT01	EAY61770401	ADP 19V 4.74A 90W (3pin)	
	NADT01	EAY61689401	ADP 19V 3.42A 65W(100-240V)PA-1650-65GQ (2Pin)	
	NADT01	EAY60685801	ADP 19V 3.42A 65W(100-240V)ADP-65JH ABB (400V, 2pin)	
	NADT01	EAY61771501	ADP 19V 3.42A 65W(100-240V)PA-1650-68GQ (3Pin) GM	Brazil
SCREW	NSCR01	FAB30248901	SCREW 2.5x6.5 (bottom*10)	
	NSCR02	FAB30208501	SCREW 2.0*3mm (odd*2,lcd bkt*4,hinge cap*4)	
	NSCR03	FAB30479801	SCREW 3.0*3mm (hdd*4)	
	NSCR04	FAB30255101	SCREW 2.5x3mm (w/lan*1,led b/d*1	
	NSCR05	FAB30484001	SCREW 2.5*5mm (k/deck*3,main b/d*2,front*4,hinge*4,usb b/d*1	
LABEL	NLAB01	MEZ62370102	Window7 OS Label NT model Windows 7 Starter Logo (0.69 X 0.69)	
	NLAB02	MEZ62085802	CPU Label All model Intel Pentium Processor (2009) 320797-001	
	NLAB02	MEZ62580802	CPU Label All model Core i3	
	NLAB02	MEZ62580801	CPU Label All model Core i5	
	NLAB03	MEZ63332501	POP LABEL KOREA	
	NLAB03	MEZ63332502	POP LABEL GLOBAL	
	NLAB03	MEZ63332503	POP LABEL FREE-DOS	
	NLAB04	MEZ62675101	ulna label	
	NLAB05	MEZ57758001	energy star label	
	NLAB06	MEZ63555701	ID Label KOREA 90W	
	NLAB06	MEZ63555702	ID Label GLOBAL 90W	
	NLAB06	MEZ63555703	ID Label GLOBAL 65W	
	NLAB06	MEZ63555704	ID Label MEXICO 90W	
	NLAB06	MEZ63555705	ID Label MEXICO 65W	
	NLAB07	3858BZ9833D	NVIDIA GRAPHIC CHIP LABEL with CUDA('09.02~)	3/17 add (11')

NLCD07

NLCD07

NLCD07

NLCD07

NLCD02

NLCD11

NLCD05

NWEBC01

NLCD06

NLCD03

NLCD04

NLCD10

NLCD01

NLCD08

NLCD09

NLCD10

Rear case Assy 포함 Item

With W/lan antenna
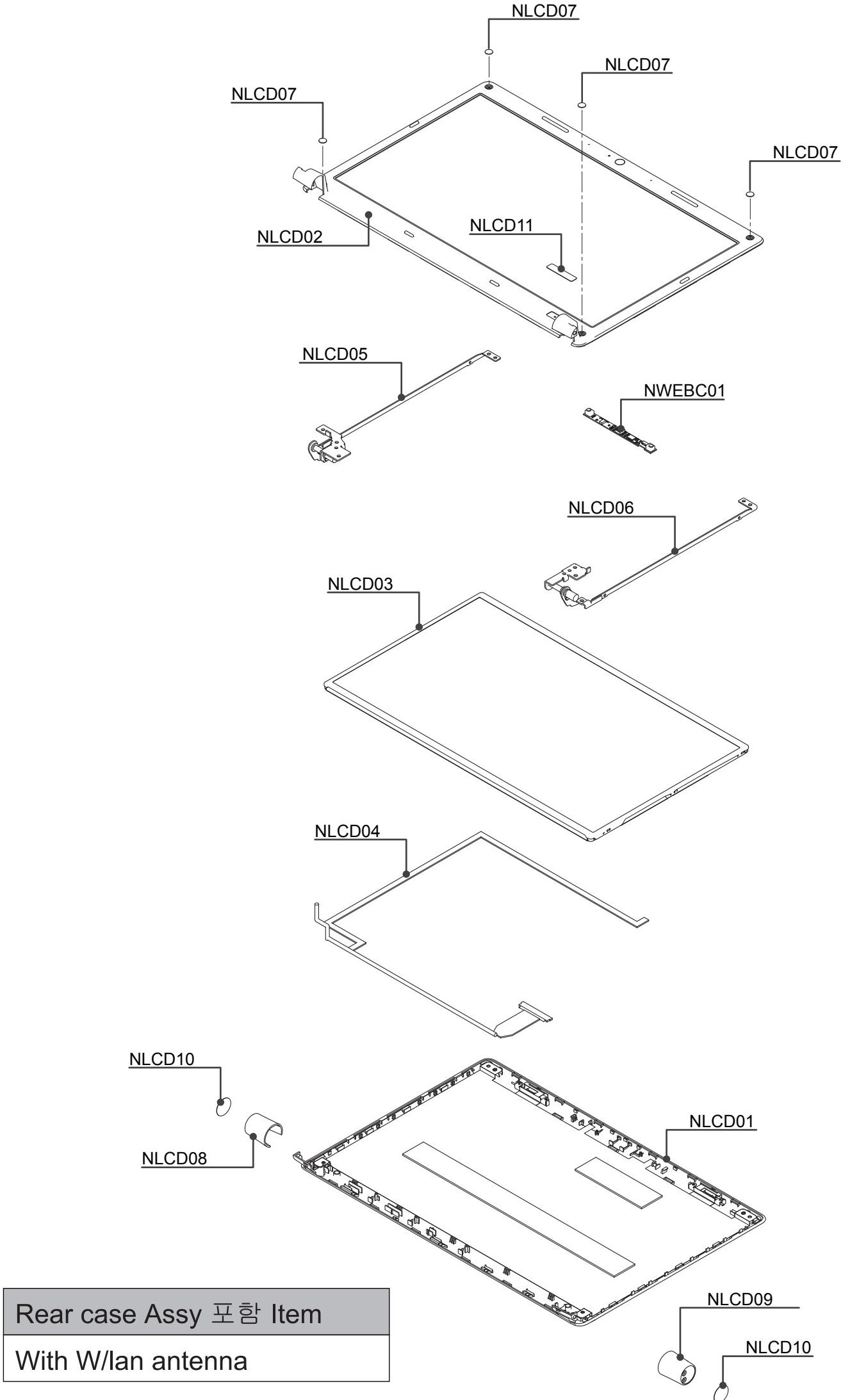
LCD

Category	Loc. No.	LG P/N	Description	Remark
Webcam	NWEBC01	EBP61281901	Camera 0.3M W/stereo Mic for Chicony	
LCD	NLCD01	ABQ73502101	rear case assy - black	
	NLCD01	ABQ73502102	rear case assy - blue	
	NLCD01	ABQ73502103	rear case assy - Red	
	NLCD01	ABQ73602602	rear case assy - black UV	12/28 add (10')
	NLCD02	ABQ73482901	front case (LG_w/ webcam)	
	NLCD02	ABQ73482902	front case (Xnote_w/ webcam)	
	NLCD03	EAJ60682802	LCD 14" HD LGD (1366X768) LP140WH1-TLC6	
	NLCD03	EAJ61788601	LCD 14" HD LGD (1366X768) LP140WH4-TLA1	
	NLCD03	EAJ60890202	LCD 14" HD BOE (1366X768)	
	NLCD04	EAD61650801	QL7 LCD(40/40/6P,1A)200V MEC - LCD Cable & Webcam cable	
	NLCD04	EAD61650802	QL7 LCD(40/40/6P,1A)200V HLN - LCD Cable & Webcam cable	
	NLCD04	EAD61650803	QL7 LCD(40/40/6P,2A)200V FOX - LCD Cable & Webcam cable	
	NLCD05	AEH73596501	LCD Bracket&Hinge_Left-SZS_QL7(FBQL7010,REV3A)	
	NLCD05	AEH73596502	LCD Bracket&Hinge_Left-JAR_QL7(FBQL7012,REV3A)	
	NLCD05	AEH73596503	LCD Bracket&Hinge_Left-AJP_QL7(FBQL7014,REV3A)	
	NLCD06	AEH73596601	LCD Bracket&Hinge_Right-SZS_QL7(FBQL7011,REV3A)	
	NLCD06	AEH73596602	LCD Bracket&Hinge_Right-JAR_QL7(FBQL7013,REV3A)	
	NLCD06	AEH73596603	LCD Bracket&Hinge_Right-AJP_QL7(FBQL7015,REV3A)	
	NLCD07	MCQ66470801	Front Rubber	
	NLCD08	MCK66539701	LCD Hinge Cap_Left (C400 black)	
	NLCD09	MCK66539702	LCD Hinge Cap_Right (C400 black)	
	NLCD10	MCR64351301	LCD Hinge Cap hole Sticker (C400 black)	
	NLCD11	MEZ63392101	name Label C400	
	NLCD11	MEZ63392103	name Label CD400	

NSUB02

NKDECK03

NKDECK02

NKDECK01

NKBD01

K/deck case Assy 포함 Item
With touch pad
With touch pad cable
With button B/D & cable
With LED B/D & cable

Key deck

Category	Loc. No.	LG P/N	Description	Remark
SUB B/D	NSUB01	EBR72762301	Power SUB-BD (with cable) USB Board (include power button)	
	NSUB02	EBR72762311	LED BD (with cable)	
Keyboard	NKBD01	AEW73049802	KB(USA)QL7(AEQL7U00,R3A)CNY	10/8 LG P/N change, same as C500
	NKBD01	AEW73049801	KB(KOR)QL7(AEQL7Y00,R3A)CNY	
	NKBD01	AEW73049808	KB(ARAB)QL7(AEQL7Q00,R3A)CNY	
	NKBD01	AEW73049807	KB(BRZL)QL7(AEQL7600,R3A)CNY	
	NKBD01	AEW73049806	KB(TUR)QL7(AEQL7A00,R3A)CNY	
	NKBD01	AEW73049805	KB(FRA)QL7(AEQL7F00,R3A)CNY	
	NKBD01	AEW73049804	KB(SPAN)QL7(AEQL7P00,R3A)CNY	
	NKBD01	AEW73049803	KB(HEBREW)QL7(AEQL7V00,R3A)CNY	
Keyboard Deck	NKDECK01	ABQ73501901	kdeck assy - black	
	NKDECK02	EBR72762321	Touchpad button B/D (with Finger B/D cable)	
	NKDECK03	EAD61651401	Touchpad Cable QL7 TP(69*6.5,12P,1A)60V HMB	
	NKDECK03	EAD61651402	Touchpad Cable QL7 TP(68*6.5,12P,1A)30V PTI	

NFAN01

NHDD02

NHDD03

NHDD01

NCPU01

NMRY01

NMRY01

NMINI01

NODD04

NMLB01

NSUB01

Main

Category	Loc. No.	LG P/N	Description	Remark
Mainboard	NMLB01	EBR72762201	QL7 MB (HM55,UMA, PIM)WO CPU 35W	
	NMLB01	EBR72762211	QL7 MB (HM55,UMA, PDT)WO CPU 35W	
	NMLB01	EBR72762221	QL7 MB (N11M-GE2,SAM 512,DIS)WO CPU 35W	
	NMLB01	EBR72762231	QL7 MB (N11M-GE2,HYN 512,DIS)WO CPU 35W	
SUB B/D	NSUB01	EBR72762301	Power SUB-BD (with cable) USB Board (include power button)	
	NSUB02	EBR72762311	LED BD (with cable)	
ODD	NODD01	EAZ60881801	ODD Super Multi GT32N	
	NODD02	ACQ85301201	ODD BEZEL ASSY(Super Multi)	
	NODD03	MAZ63031801	ODD Bracket	
	NODD04	EAD61651101	ODD connection cable AX1 ODD(13P/13P,R3A)30V,FOX	
	NODD04	EAD61651102	ODD connection cable AX1 ODD(13P/13P,R2A)30V,ANR	
HDD	NHDD01	EAZ60666002	250GB HGST	
	NHDD01	EAZ60841902	250GB TSDK	
	NHDD01	EAZ60666003	3200GB HGST	
	NHDD01	EAZ60841903	320GB TSDK	
	NHDD01	EAZ60666004	500GB HGST	
	NHDD01	EAZ60841904	500GB TSDK	
	NHDD01	EAZ60841905	640GB TSDK	
	NHDD02	MAZ63031901	HDD Bracket ASSY	
	NHDD03	EAG62811401	HDD Connector	
MiniCard	NMINI01	EBM60841501	Azurewave AW-NB041H (BGN 1X1)	
	NMINI01	EBM60901401	ASKEY WLL6100B-D95 (BGN 1X1)	
	NMINI01	EBM60681601	Intel Centrino Advanced-N 6200(AGN, 2x2) HMWG Minicard	
	NMINI02	EAT61054101	BLUETOOTH2.1+EDR USB MODULE(QBT410UB-04)	
	NMINI03	EAD61651304	Bluetooth Cable QL7 BT(6/6,3A)300V NEI	
	NMINI03	EAD61651301	Bluetooth Cable LX9 BT(6/6,1A)300V FOX	
Memory	NMRY01	EAN51348905	Hynix DDR3-1066 2G	
	NMRY01	EAN51348605	Hynix DDR3-1066 1G	
	NMRY01	EAN61148302	A-Data DDR3-1066 2G	
	NMRY01	EAN61148202	A-Data DDR3-1066 1G	
	NMRY01	EAN61607001	Hynix DDR3-1333MHz 4GB	3/17 add (11')
Thermal Module	NFAN01	MED62211901	QL7 THERMAL MODULE ASSY 35W GM (CCI)	
	NFAN01	MED62211902	QL7 THERMAL MODULE ASSY 35W GM (FCN)	
	NFAN01	MED62211903	QL7 THERMAL MODULE ASSY 35W GM (TWE)	
	NFAN01	MED62212001	QL7 THERMAL MODULE ASSY 35W PM (CCI)	
	NFAN01	MED62212002	QL7 THERMAL MODULE ASSY 35W PM (FCN)	
	NFAN01	MED62212003	QL7 THERMAL MODULE ASSY 35W PM(TWE)	

Main

Category	Loc. No.	LG P/N	Description	Remark
CPU	NCPU01	EAN60916607	i3-370 2.40GHz	
	NCPU01	EAN60916610	i3-380 2.53GHz	
	NCPU01	EAN60916611	i5-460 2.53GHz	
	NCPU01	EAN60916612	i5-560 2.66GHz	
	NCPU01	EAN60916613	i5-580 2.66GHz	3/17 add (11')
	NCPU01	EAN60916614	P6100 2.0GHz	
	NCPU01	EAN60916615	P6200 2.13GHz	
	NCPU01	EAN60916619	i5-480M (2.66 GHz)	1/6 add (11')
	NCPU01	EAN60916620	i3-390M (2.66 GHz)	1/6 add (11')

NCVR02

NCVR01

NCVR03

NBOTM04

NDSO01

NBOTM03

NBOTM03

NBOTM01

NBOTM04

NODD03

NODD01

NBATT01

NBOTM02

NODD02

BOTTOM case Assy 포함 Item
With DC-JACK
With Speaker

Etc.

Category	Loc. No.	LG P/N	Description	Remark
Cover	NCVR01	ACQ85327101	CPU,Memory DOOR assy	
	NCVR02	ACQ85327201	HDD DOOR assy	
	NCVR03	ACQ85300501	WI-FI DOOR assy	
ODD	NODD01	EAZ60881801	ODD Super Multi GT32N	
	NODD02	ACQ85301201	ODD BEZEL ASSY(Super Multi)	
	NODD03	MAZ63031801	ODD Bracket	
	NODD04	EAD61651101	ODD connection cable AX1 ODD(13P/13P,R3A)30V,FOX	
	NODD04	EAD61651102	ODD connection cable AX1 ODD(13P/13P,R2A)30V,ANR	
Battery	NBATT01	EAC60898301	BATT LI,916T2035F,3S2P,5.2A Simplo-SDI(Black)	
	NBATT01	EAC60938401	BATT LI,911600005,3S2P,5.2A Celxpert-LGC (Black)	
	NBATT01	EAC61098403	BATT LI,916T2099F,3S2P,4.4A Simplo-SDI(Black)	
Dummy Socket	NDSO01	MCK66558801	SD Card Dummy	
Bottom	NBOTM01	ABQ73502001	Bottom Case assy -black	
	NBOTM02	MJH62334601	DC-Jack Cable	A510 common use
	NBOTM03	MDP62246801	Bottom Rubber (2ea) - big	
	NBOTM04	MDP62246701	Bottom Rubber (2ea) - small	